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New York Medical Journal

INCORPORATING THE

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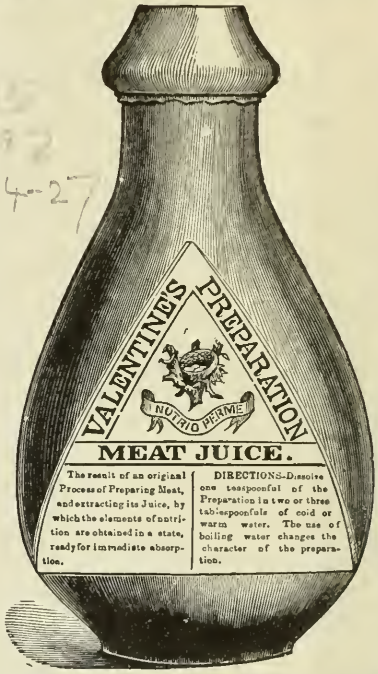
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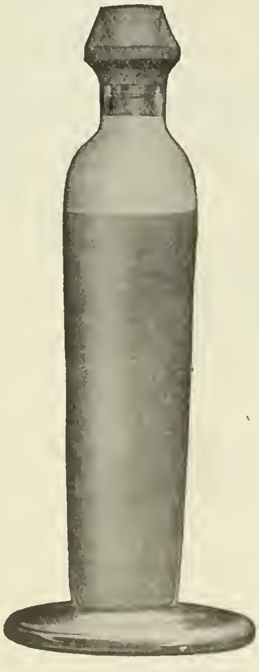
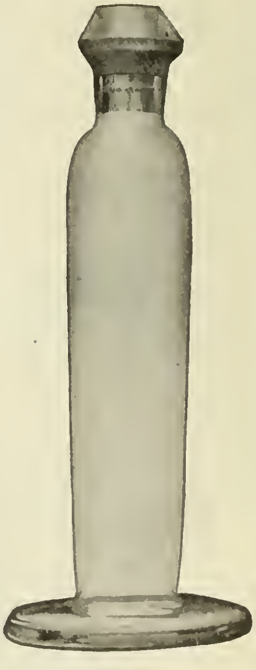

The fat of cow's milk after digestion with gastric juice


The fat of cow's milk with Eskay's Food after digestion with gastric juice

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VOL. XCII. No. 14. NEW YORK, OCTOBER 1, 1910. WHOLE No. 1661.

Original Communications.

THE IMPORTANCE TO PHYSICIANS OF THE NEW EMPLOYER'S LIABILITY LAW.

By JOHN J. MOORHEAD, M. D.,
New York,
Instructor in Surgery, New York Postgraduate Medical School and Hospital; Attending Surgeon, Red Cross Hospital; Assistant Visiting Surgeon, Harlem Hospital.

A law compensating employees injured while at work in certain trades went into effect in this State September 1st, and by its provisions employers pay workers a fixed indemnity during the period of disability or in the event of death.

This enactment does not provide for the appointment of any State Board of Medical Examiners, and hence the diagnosis and prognosis of the attending or chosen examining physician virtually assesses the amount to be paid.

The clauses of the law of special interest to physicians are the following:

> ". . . Sec. 215. Application of article. This article shall apply only to workmen engaged in manual or mechanical labor in the following employments, each of which is hereby determined to be especially dangerous, in which from the nature, conditions, or means of prosecution of the work therein, extraordinary risks to the life and limb of workmen engaged therein are inherent, necessary or substantially unavoidable, and as to each of which employments it is deemed necessary to establish a new system of compensation for accidents to workmen.
>
> 1. The erection or demolition of any bridge or building in which there is, or in which the plans and specifications require, iron or steel frame work.
> 2. The operation of elevators, elevating machines, or derricks or hoisting apparatus used within or on the outside of any bridge or building for the conveying of materials in connection with the erection or demolition of such bridge or building.
> 3. Work on scaffolds of any kind elevated twenty feet or more above the ground, water, or floor beneath in the erection, construction, painting, alteration, or repair of buildings, bridges or structures.
> 4. Construction, operation, alteration, or repair of wires, cables, switchboards, or apparatus charged with electric currents.
> 5. All work necessitating dangerous proximity to gunpowder, blasting powder, dynamite, or any other explosives, where the same are used as instrumentalities of the industry.
> 6. The operation on steam railroads of locomotives, engines, trains, motors, or cars propelled by gravity or steam, electricity or other mechanical power, or the construction or repair of steam railroad tracks and road beds over which such locomotives, engines, trains, motors, or cars are operated.
> 7. The construction of tunnels and subways.
> 8. All work carried on under compressed air.
>
> ". . . Sec. 219-a. Scale of compensation. The amount of compensation shall be in case death results from injury:
>
> (a) If the workman leaves a widow or next of kin at the time of his death wholly dependent on his earnings, a sum equal to twelve hundred times the daily earnings of such workman at the rate at which he was being paid by such employer at the time of the injury subject as hereinafter provided, and in no event more than three thousand dollars. Any weekly payments made under this article shall be deducted in ascertaining such amount.
>
> (b) If such widow or next of kin at the time of his death are in part only dependent upon his earnings, such proportionate sum not exceeding that provided in subdivision a as may be determined according to the injury to such dependents.
>
> (c) If he leaves no dependents, the reasonable expenses of his medical attendance and burial, not exceding one hundred dollars.
>
> 1. Whatever sum may be determined to be payable under this article in case of death of the injured workman shall be paid to his legal representative for the benefit of such dependents, or if he leaves no such dependents, for the benefit of the persons to whom the expenses of medical attendance and burial are due.
> 2. Where total or partial incapacity for work at any gainful employment results to the workman from the injury, a weekly payment commencing at the end of the second week after the injury and continuing during such incapacity, subject as herein provided, equal to fifty percentage of his average weekly earnings when at work on full time during the preceding year during which he shall have been in the employment of the same employer, or if he shall have been in the employment of the same employer for less than a year, then a weekly payment of not exceeding three times the average daily earnings on full time for such less period. In fixing the amount of the weekly payment, regard shall be had to the difference between the amount of the average earnings of the workman before the accident and the average amount he is able to earn thereafter as wages in the same employment or otherwise. In fixing the amount of the weekly payment, regard shall be had to any payment, allowance or benefit which the workman may have received from the employer during the period of his incapacity, and in the case of partial incapacity the weekly payment shall in no case exceed the difference between the amount of the average weekly earnings of the workman before the accident and the average weekly amount which he is earning or is able to earn in the same employment or otherwise after the accident, but shall amount to one half of such difference. In no event shall any compensation paid under this article exceed the damage suffered, nor shall any weekly payment payable under this article in any event exceed ten dollars a week or extend over more than eight years from the date of the accident.
>
> Sec. 219-b. Medical examinations. Any workman entitled to receive weekly payments under this article is required, if requested by the employer, to submit himself for examination by a duly qualified medical practitioner or surgeon provided and paid for by the employer, at a time and place reasonably convenient for the workman, within three weeks after the injury, and thereafter at intervals not oftener than once in six weeks. If the workman refuses to submit to such examination, or obstructs the same, his right to weekly payments shall be suspended until such examination has taken place, and no compensation shall be payable during or for account of such period. . . ."

The employee, however, need not avail himself of the foregoing terms, but may elect to submit his case to a court and jury, as has been the custom heretofore.

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Liability laws of this general type have been in force in foreign countries for many years; and, indeed, the German Insurance Law is probably the pattern from which others are copied or modified. In our own country, Massachusetts has had for about two years a statute with elective principles somewhat like the present New York law.

At the last session of congress a committee was appointed by the President to investigate this whole subject with the object of presenting a tentative bill for national enactment, and seemingly it is only a question of time until our country follows in the wake of most of the older powers in this respect.

Because this new law is mandatory as to payment to a worker irrespective of the manner of the accident, a dual relationship for the physician is created inasmuch as the prognosis will affect not only his patient, but the latter's employer as well.

It is somewhat unfortunate that no official medical court of last resort is provided in case of dispute as to the extent or period of disability. In such an event, the attending and examining physicians will do well to agree upon a satisfactory arbitrator, preferably a surgeon connected with a hospital having to do with the care and treatment of the injured.

There is also an inadequacy in the law in that it does not provide for a physical examination preliminary to employment to discover latent or hidden physical defects of which the subject may be ignorant, but which later could be ascribed to an occupation accident. As examples might be mentioned herniæ and defects of sight and hearing.

To obviate the foregoing, employers or insurance companies will insist on a physical examination as a prerequisite to employment, with reexamination at yearly or other designated intervals. Such a procedure may have an important economic effect as it may disqualify certain workers for ailments not of themselves incapacitating, but which in the event of an accident might be ascribed thereto. Such disqualification will fall with greatest frequency on workers past middle life, and at a time when wages are most necessary. The advantage to the working class and to the public generally of a searching examination will be considerable as incipient tuberculosis, cancer, and other less serious but remediable maladies will be discovered. Medical examination for life insurance has informed many of serious cardiac and nephritic troubles of which the subject was ignorant; similarly liability insurance examination will disclose numerous curable ills that might later menace life.

Before granting a certificate of physical capacity to work, the examination should embrace all that a life insurance medical certificate requires, and also include investigation of the special senses, notably sight and hearing. The nervous system should be examined with a view to excluding the commoner maladies, especially tabes, multiple sclerosis, and multiple neuritis. Hysteria and neurasthenia with their signs and stigmata should not be forgotten, and tremors and tics should be noted. Scars, deformities, and signs of previous injury or disease require notation. Prolapse of viscera, notably uterine and renal, should be searched for. In women, menstrual and allied disorders must be subjects of inquiry. The external genitals should be inspected. Special examination is required of the inguinal and femoral regions, and note made as to the size of the respective rings. The frequency of herniæ and the known fact that same may have long existed unknown to the patient or ordinary examiner, should put us on guard, especially as injury as a producing cause of this condition is now generally medically regarded as but an incident, although the laity continue to ascribe "rupture" to a single act of violence.

It will be necessary for us also to consider the elements determining the prognosis, and these may be said to be:—1. The manner of receipt, technical nature, and the extent of injury. 2. The individual. 3. The treatment. 4. The occupation.

Obviously, the first of these is the most important but much modified by those elements following it.

The *individual* factor refers generally to physique, sex, age, temperament, and notably as to habits. Alcoholics are prone to react poorly to even slight trauma, and a fatal delirium tremens ensues not uncommonly, particularly if the case is one of ordinary fracture or head injury. It is also to be remembered that an injury may be accused of awakening or aggravating an old affection; but before expressing an opinion in such a case we must bear in mind that many ailments are of themselves independently of a progressive type with periods of apparent quiesence or latency. In this same category falls that class of cases in which death is attributed to a remote injury, often at a time when recovery was apparently complete. In expressing an opinion under such circumstances, main reliance should be placed on our knowledge and experience as to what usually and ordinarily happens under similar conditions; and also as to the probable intervention of any new or independent injury or disease since the original accident.

That *treatment* is an important prognostic element and needs no comment. Ambulance or hospital attendance is accorded to the vast majority of the injured, and the outlook for those thus treated is obviously better than if home treatment only was obtainable.

The *occupation* element is of much importance both as to the immediate and remote outcome. A laborer sustaining a compound comminuted fracture of both bones of the leg resulting in shortening and ankylosis, necessarily assumes a different working capacity outlook than a bookkeeper with an identical injury.

It is needful to distinguish between total and partial inability to resume the same or another occupation demanding less of the damaged organ or limb.

This compensation law should prove of considerable value to physicians in the care and treatment of the injured, and one of its benefits should be to instil an element of hopefulness and contentment in the patient inasmuch as during the enforced idleness financial worry to a great degree is abolished. In effect, many workers now have an accident insurance policy guaranteeing them and their families a living until restoration to health. This phase of the enactment will probably to some extent diminish malingering, subjective symptoms, and the more or less conscious and wilful exaggeration so characteristic of litigated cases.

From a statistical standpoint, much value should accrue as written records will necessarily be made covering the entire range of the surgery of accidents, a topic not well treated in our medical literature.

301 West Eighty-ninth Street.

TWILIGHT TALKS BY THE DOCTOR.

By George F. Butler, A. M., M. D.,
Chicago, Illinois.

For some time after Robespierre was born I was telephoned for every time he slept a little longer than the mother thought he ought to, when he laughed immoderately, and when he cried, and he cried much of the time. Do you know I think few people appreciate the significance of a baby's cry. At the very outset of the acquaintance with each other, mother and baby are at a disadvantage, because the baby's only language is a cry and this language the mother is apt to misinterpret. The baby will use his best efforts to make communication easy by learning the mother's language as far as possible, but meanwhile it would not be amiss if the mother were to use her best efforts in learning the baby's language of the cry.

Most emphatically the baby expresses his opinion of the world into which it comes at birth by a cry of discomfort. His first breath is a cry and from this time until he can talk, he is, as Tennyson says: "An infant crying for the light, An infant crying in the night, And with no language but a cry." I think it would be wise to make a little study of this language and see if we can gain some idea of what the child has to say.

First, as to the cry of discomfort. It is a pitiful wail, not as feeble as the cry of fretfulness, nor as strong as that of pain. It is easy to understand why the first cry should be one of discomfort. At birth the child is removed from an equable temperature of 98° F. to the cold temperature of the "cold, cold world," which on the warmest day would seem raw and uncomfortable to him. The later causes of the cry of discomfort may be found in bad air, soiled clothing, cramped position, dress too heavy or too tight, the temperature of the room too hot or too cold. It is for the mother to discover which of these causes is operative in producing the cry.

Then comes the cry of hunger. This may sound much like the cry of discomfort with an added tone of impatience. The hungry child does not toss about as the restless or uncomfortable one, and will often cease crying if he catches sight of his mother or his bottle. If no food is forthcoming he resumes his demand with more insistence.

The cry of fretfulness is weak, plaintive, sometimes nasal in quality, and indicates general ill feeling without actual pain. This fretfulness may be caused by a slight indigestion, a wish to be amused, a desire for fresh air, by headache, or by deprivation of playmates or playthings, by some slight discomfort, as pressure of a knot or button in the clothes, sleepiness, sore mouth, chafing, or other irritation of the skin, or because he wants his mother's companionship and wishes to be entertained.

The cry of pain is loud and vigorous and in children over three months old is accompanied with tears. The sharper the cry the stronger the pain. Or we may reverse the statement, and say the stronger the pain the sharper the cry. Colic is a great producer of this cry, and the pricking of pins is a possibility not to be overlooked in searching for the cause.

When a child cries out sharply and stops quickly, producing suppressed or choked cries, we should immediately think of pleurisy as the cause. Inflammation of the membrane around the lungs produces pain and causes a sharp outcry. The deep breath of crying increases the pain, and the cry suddenly stops.

When in watching a child that is evidently crying with pain we see him bending his head to one side, or carrying his hand to his ear, we may suspect earache.

The hoarse cry of croup is recognized by most mothers. It indicates some trouble with the vocal cords.

It is not hard to diagnosticate the cry of fright; it has a hysterical agitated quality.

The tired or impatient cry is easily recognized by most mothers.

The disappointed cry is heard when the child for some cause finds himself unable to nurse. It may be from a sore mouth, or a tied tongue, an obstructive nose on the child's part, or a defective nipple on the mother's breast.

If the mother in the early weeks of the baby's life pay careful attention to his cries, she could learn to distinguish between these various cries and so be able to determine whether the cause is serious or unimportant. She may be sure that the child will not cry without a cause. If he is well fed, not thirsty, and not uncomfortable he will not cry, provided he has not been spoiled, which reminds me that I should not forget to speak of the cry of temper. I have seen mothers spank little babies who were crying vigorously, saying that there was nothing the matter but ill temper. It is true that these strenuous mothers are not numerous; most mothers coddle their children too much.

If an infant manifests ill temper in its cries, it is because he has found it necessary to do so in order to receive proper attention, or because he has been teased, or in some way unjustly treated, and I mean to include by "unjustly," children unduly coddled and humored, and in either case the punishment is more deserved by others than by the baby himself.

On one occasion I was called to see this baby to whom I have referred and found him crying vigorously, and I recognized at once by the character of the cry that it was the cry of pain. The mother was greatly worried and voluble in her explanations of how the baby was taken sick, how it had behaved since the onset of the illness, interspersing her remarks by frequently picking the child up and trotting him up and down, throwing him over her knee and patting his back, cooing and singing, etc., in vain attempts to quiet him. I listened attentively to her story meanwhile watching the baby who was kicking and crying unmistakably with pain. Then I made careful inquiries as to the kind of food the baby was taking, how he was fed, and when the mother had finished telling me what she thought I wished to know I examined the bottle, milk, and nipple, for the baby even at this late date had not been weaned from his bottle. He was old enough to quit it, but his over indulgent mother allowed him to continue sucking his bottle because he cried if he was denied this solace. When I examined this plaything I found it to be a veritable poison pump—for such is a nursing bottle with a long rubber tube. Germs not only lurked but stalked in this bottle and its contents. Knowing that nine tenths of the disorders of infancy and childhood are due to either external or intestinal infection I felt quite sure even without examining the child that I had to deal with an intestinal infection. Moreover the child seemed very feverish and upon taking his temperature I found it to be 103° F. Fever almost invariably means infection. If there was an infection the question was to locate the seat of the trouble.

The child was of that tender age when the physician's attention should always be directed to the intestinal tract or orifices of the body. One should not neglect to examine the throat and ears carefully for otitis or amygdalitis may occur in the very young. Indeed a thorough and careful examination should be made of the whole body, even the genital organs should be carefully examined; vaginitis or phimosis will make a child very irritable and restless. Then turn the child over and examine his bottom, for a baby with a "sore bottom" will make more noise than a dozen babies suffering from some serious illness. It is not always the sickest child who makes the most noise by any means.

The chest was carefully examined despite the fact it was midsummer. At this season of the year children are far more liable to have disorders of the gastrointestinal tract, yet it is well to remember that there is no law forbidding a child having pneumonia, pleurisy, pericarditis, or anything else for that matter, any time of the year.

Do not overlook anything. It is mortifying to talk indifferently of "indigestion," "teething," or "measles," and then have to treat later a meningitis, osteomyelitis, infantile paralysis, or axillary abscess.

"Glandular fever" is more common than the average doctor thinks, so do not fail to examine the body thoroughly for enlarged glands. The temperature in so called glandular fever is irregular and high. Tuberculous children are apt to present a rise of temperature at intervals.

It is necessary to make inquiries as to where the child with a high fever has been and with whom he has been playing. In this way we often are able to recognize scarlet fever or measles positively, twenty-four hours earlier than we would otherwise.

You cannot begin treatment too early in the exanthemata; a case treated early and "right" is half cured already.

The mother suggested that the baby's trouble might be due to "teething." Indeed she was quite inclined to think that such was the case inasmuch as "grandma" had said so, and that "babies were apt to get very sick when they were 'teething.'" It is well for the young doctor not to be influenced by old women, who would assign nearly all febrile affections of infancy to teething. Investigation will usually reveal autotoxæmia.

Jacobi has well said: "You know that among the public at large, even among the educated part of the community, teething is regarded as one of the two scapegoats of all the diseases of infancy. Teething and worms are among mothers acknowledged as the universal and all powerful sources of disease. Teething, a normal, physiological development, taking place at an age which for many reasons is subjected to a larger number of diseases, has a strong hold on the imagination of frightened maternal minds. A mother will bring to you her child, thin, emaciated, and anæmic, with sunken eyes and the wrinkled physiognomy of old age, and tell you that she is well aware the poor thing is suffering from teething and that therefore nothing can be done to alleviate its sufferings. She will never be convinced that the child is dying from her own neglect, that she has allowed a slight catarrh of the intestines, perhaps, to degenerate into incurable ulceration of the follicles. Thus you will learn that ignorance and prejudice will attribute all, or nearly all, the diseases of the infantile age to a normal process. To the same cause are attributed inflammation of all the external and internal organs, the brain and its membranes, air passages and lungs, mouth, throat, stomach, and intestinal canal; as also cough, vomiting, diarrhœa, and dysentery, derangements of the secretion and emission of urine, chronic eruptions of the skin, convulsions and paralysis, exudations of serum, and extravasations of blood, in any of the numerous organs of the infantile body. Teething is thus considered the sufficient cause of most of the terrible diseases which prove fatal to thousands of the rising generation. I can assure you that the readiness to attribute all the diseases of infantile life to teething has destroyed more human beings than many of the wars described in history. For though parents are so much impressed with the belief of the dangers of teething, still they never think of attempting to save the lives of their children by counteracting the supposed life endangering powers of a normal process."

The fact is that teething is neither a disease nor a direct cause of disease except in very rare cases.

The language of disease in infantile life is intelligible enough. It is our province to listen to it and to understand it.

Your own professional observations and a thorough physical examination will reveal more than the parents can tell you, so never neglect to examine a child, no matter how young, as carefully and thoroughly as you would an adult.

BUBONIC PLAGUE IN GROUND SQUIRRELS.*

By George W. McCoy, M. D.,
San Francisco,

Passed Assistant Surgeon, United States Public Health and Marine Hospital Service.

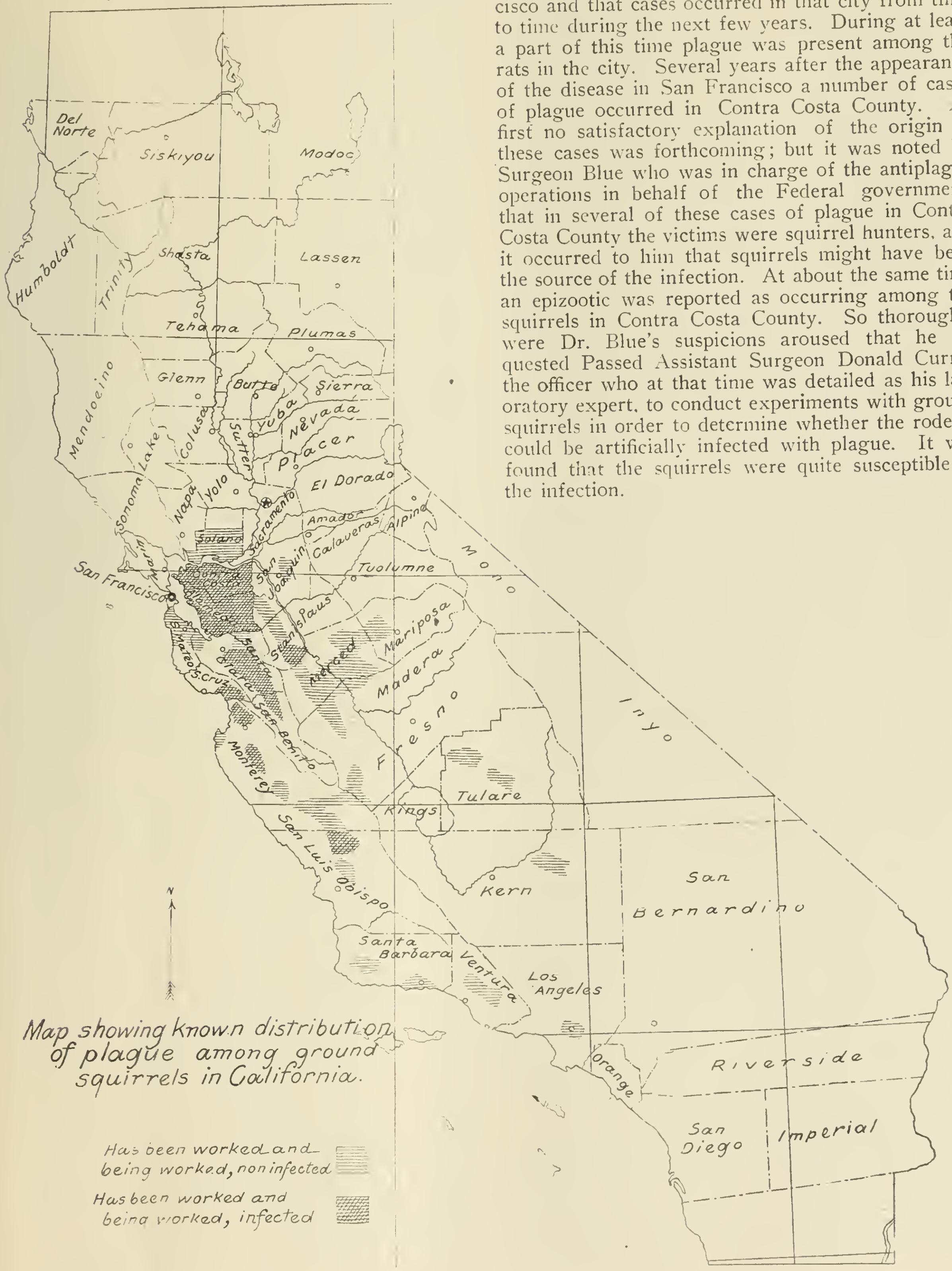
History: Several accounts of plague among ground squirrels in India appear in the literature and in some instances extensive epizootics are said to have occurred. In Siberia, plague has been found to prevail at times among allied rodents, the marmots. The opinion is expressed by some writers that plague is kept alive by these rodents during the long intervals that elapse between its appearance in the haunts of civilized men.

---

*Read before a meeting of the Southern California Medical Society held at Redlands, California, May 4, 1910.

These examples are cited for the purpose of showing that plague among rodents other than rats is a well recognized occurrence outside of America. From South America we have reports of a plague epidemic among guineapigs, rodents fairly closely related to squirrels.

The interest ground squirrel plague has for us is due chiefly to the fact that during the past two years the disease has been found among the squirrels in several places in California. It will be recalled that early in 1900 cases of plague were detected among the oriental population of San Francisco and that cases occurred in that city from time to time during the next few years. During at least a part of this time plague was present among the rats in the city. Several years after the appearance of the disease in San Francisco a number of cases of plague occurred in Contra Costa County. At first no satisfactory explanation of the origin of these cases was forthcoming; but it was noted by Surgeon Blue who was in charge of the antiplague operations in behalf of the Federal government, that in several of these cases of plague in Contra Costa County the victims were squirrel hunters, and it occurred to him that squirrels might have been the source of the infection. At about the same time an epizootic was reported as occurring among the squirrels in Contra Costa County. So thoroughly were Dr. Blue's suspicions aroused that he requested Passed Assistant Surgeon Donald Currie, the officer who at that time was detailed as his laboratory expert, to conduct experiments with ground squirrels in order to determine whether the rodents could be artificially infected with plague. It was found that the squirrels were quite susceptible to the infection.



Map showing known distribution of plague among ground squirrels in California.

Has been worked and being worked, non infected ▤

Has been worked and being worked, infected ▦

The actual demonstration of plague among the ground squirrels under natural conditions was made during the summer of 1908, and by a strange coincidence, within a period of a month plague squirrels were found in the north in Contra Costa County and in the south within the border of the city of Los Angeles. In Los Angeles the disease was detected through the fact that a perfectly typical case of plague developed in a boy who had been bitten by a sick squirrel. The suspicions of the authorities were aroused, and as a result a search was made and one plague infected squirrel was found. Prompt measures of squirrel destruction were at once inaugurated by the city health officer, Dr. L. M. Powers, and as a result of these measures the infection in the city was wiped out. There has been much difference of opinion as to the origin of squirrel plague in Los Angeles. Some of the health authorities believe that it was a part of a State wide infection among the squirrels; others hold the view, in which I concur, that it was a small epidemic due to the importation of an infected rat from the north.

Plan of campaign: Several other cases of squirrel plague were found in Contra Costa County in the summer of 1908, and on account of the importance of the matter, Surgeon Blue undertook to determine the extent of the infection. The plan was as follows: The field work was carried out by Passed Assistant Surgeon W. C. Rucker. In Alameda County part of the work was under the supervision of Acting Assistant Surgeon William B. Wherry, who had charge of the operations of the service in Oakland and vicinity. The work was gradually extended until nearly all of the counties between Ventura on the south and Solano on the north were more or less extensively investigated. (See accompanying map.) Squirrel hunters were stationed at various points in the different counties. The squirrels which these men shot were forwarded by express to the Federal Plague Laboratories in San Francisco and Oakland, where they were dissected and examined for the purpose of detecting the presence of plague infection. Extensive infection seems to be confined in a general way to the counties upon the eastern and southern shores of San Francisco Bay.

Extent of investigation: During this work over 90,000 squirrels have been examined and of this number over 300 have been found infected. Where the infection has been found it runs all the way from 1 in 1,000 to as high as 1 in 10.

Laboratory aspects of squirrel plague: We find that plague infection in the ground squirrel is characterized by well marked and fairly characteristic gross pathological changes. These are as follows: A purulent or caseous bubo is present in the majority of cases and sometimes it is the only lesion. Caseous and purulent lesions in the liver, spleen, or lungs, or in two or more of these organs are found in a considerable percentage of cases.

There is a disease of ground squirrels that rather closely resembles plague. We have thus far found it confined to a small radius near Porterville in Tulare County. The lesions are not only similar to those of plăgue in squirrels, but the disease also causes plaguelike lesions in guineapigs. There is no danger of confounding the condition with plague if careful microscopical and bacteriological examinations are made.

The plague bacillus isolated from infected squirrels is on the average somewhat less virulent than that isolated from rats and from men.

The question of how plague is transmitted among squirrels and from squirrels to persons is one about which we have no conclusive evidence. We have shown that fleas may carry plague from squirrel to squirrel and from squirrel to rats and it is known that the disease may be transmitted by feeding infected materials. Work along these lines is still in progress at the Federal Laboratory and we hope to have more extensive evidence later.

I should mention here an interesting fact and one which I regard as of much significance, and that is the development of a partial immunity among the squirrels in those localities where plague has prevailed for several years. This may mean a gradual extinction of the disease or it may indicate that this partially resistant race of rodents will, if not vigorously attacked, perpetuate the disease for many years.

It was realized that the campaign against the squirrels was one that was of the greatest importance and would be attended by a very heavy expense; therefore we have made every effort to place the diagnosis of the disease among the rodents upon a thoroughly secure foundation. We have not depended upon the gross lesions or upon the results of microscopical examinations of smear preparations, but have isolated the bacillus, studied it culturally, and tested its effects upon animals known to be susceptible to plague, and upon those known to be immune to plague. The results of these experiments show that the bacillus is identical with that derived from plague in rats and in man, with the exception mentioned before of being somewhat less virulent.

Several of the squirrel cases have been confirmed by three bacteriologists working independently, one representing the Federal government, one the State, and one the city of San Francisco.

Human cases: Since plague was first suspected among ground squirrels, about a dozen persons have contracted the disease under circumstances that pointed conclusively to squirrels as the cause. In these cases there was no other source of infection, such as plague infected rats or plague among persons, to account for the disease. Last year we had three cases. In two of them there was a clear history of handling squirrels a few days before the onset of the symptoms, and infected squirrels were found upon the ranches where the infection was acquired. In the third case, and in two cases in the previous year, the infection was found on the ranch but there was no history of close association with squirrels. Each of the three latter cases might be accounted for by a new theory that has been advanced. It was suggested by Assistant Surgeon F. Simpson that as cattle frequently graze in the vicinity of squirrel colonies, it is possible for squirrel fleas which harbor the infection to be carried to barns and in this manner persons frequenting the barns might be infected.

An interesting fact in the cases of plague of squirrel origin (six in number) about which I have personal knowledge is that all patients had the bubo in the axillary region. I may mention here that of these six patients, three died. This is about the usual mortality of plague among Caucasians.

Dangers: We do not believe that any general epidemic among persons is to be feared on account of this squirrel plague; indeed as information on the subject is disseminated, and as people learn the dangers of handling squirrels, the number of cases directly chargeable to squirrels should diminish. We are more concerned about the danger of the infection of the rats in our cities.

In the suburbs of towns and cities, rats and squirrels come into very close contact and it would seem to be very easy to have the disease carried from the squirrels to the rats, and as a result have a general infection of the cities.

Now that we have discussed the subject of squirrel plague let us consider what is to be done in the way of safeguarding the public health. It will, I think, be admitted without question that the prevalence of plague among these rodents demands thorough and radical treatment, and the only feasible way to cope with it seems to be to eradicate the squirrel, at least throughout the infected region, and better throughout the State. At first sight this seems to be a hopeless task, but upon further consideration we find that there is one great factor that operates in our favor. On account of the damage done to crops every farmer who lives in a squirrel infested region is interested in the question of squirrel eradication. Many of them spend considerable sums of money each year in squirrel extermination. The State legislature has passed a law requiring land holders to exterminate rodents on their properties. We believe that when this law is enforced it will have the cordial support of practically every one who is engaged in agricultural pursuits.

Several methods of eradication are in general use. Carbon bisulphite is largely used by the farmers throughout the State. It is applied in one of two ways: The fluid is placed upon waste or a similar substance and thrown into the burrows which are then closed with earth; the second method is to put the bisulphide in the holes and to cause it to explode. Some farmers prefer one method and some the other. Both are undoubtedly efficient but very expensive. We have done some work to determine the cost of eradication by the bisulphide method and find that the expense for material alone is about $0.50 per acre.

A much cheaper method is the use of poisoned grain. Several formulæ are recommended. One that has the sanction of the United States Biological Survey is given below:—

Formula of Biological Survey:
20 lbs. whole barley,
1 ounce strychnine sulphate,
1 drachm saccharine,
1 pint starch solution.

Mix strychnine and saccharine in hot starch solution; then slowly add to barley.

In addition to these methods the manufacturers of firecrackers prepare a cartridge which is put in the hole and exploded. We are at present experimenting with this method, but I see no reason for believing that it will be any more efficient than the ones now in use.

SCARLET FEVER.

Channels of Conveyance and Causes of Its Spread.

By Jacob Sobel, M. D.,
New York.

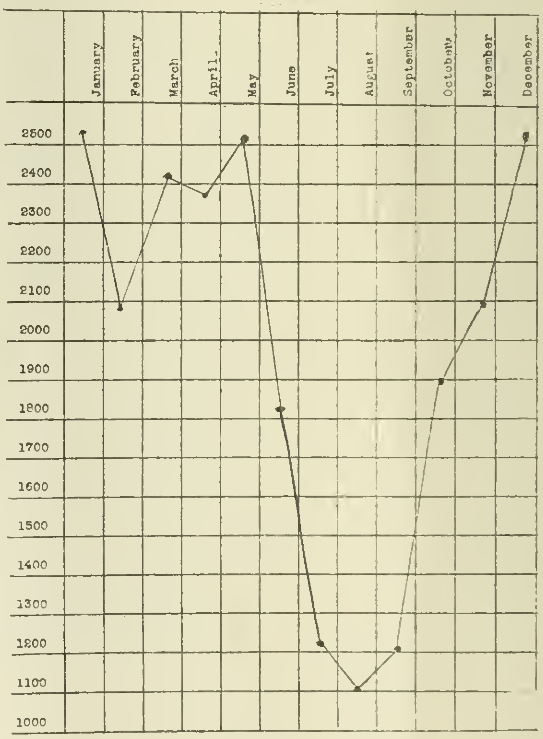
Prophylaxis is the keynote of modern medicine. In a disease like scarlet fever, so treacherous in its remote consequences and so uncertain in its ultimate outcome, it becomes a matter of primary importance to take advantage of every possibility in order to prevent the spread of the disease. It has long been known that scarlet fever, more so than other exanthemata, frequently attacks but one member of a family at the same time, even though the association be intimate and prolonged. The virus of measles differs from that of scarlet fever in that while it is more diffusible, so to say, it is far less virulent; it is more likely, in other words to attack several members of a family albeit that every possible means is employed to prevent contact of the one with the other. Many and interesting are the ways in which scarlet fever is known to have been conveyed; a glance at any of the textbooks will inform one of carpets, furniture, clothing, books, toys, bouquets, letters, ceilings, walls, bedding, parcels, articles of food, and many other media. Those of us who during the year see many cases of this disease among the poorer element of the population, who note the very meagre attempts at isolation, and the necessary association of the persons in charge with the outside world, do not wonder that the disease is so prevalent and that despite all the efforts on the part of the Department of Health the number of cases each year remains very large. Thus the figures from the Bureau of Records show that the number of cases reported in the Greater City of New York from 1898 to 1908 was as follows:

1898	9,148	1904	13,495
1899	7,387	1905	8,071
1900	6,683	1906	7,881
1901	16.692	1907	15,788
1902	11,894	1908	24,426
1903	10,887		

I shall speak of the *number* as being very large, for we all know that the virulence of the different epidemics varies from year to year. It would seem that the disease ought to be on the wane when one considers the activity of the Department of Health in insisting upon the report by physicians of all cases however mild, in educating the parents as to its dangers and consequences, in its exclusion from school of suspected and true cases, and in the distribution of circulars as to preventive measures. Such is not the case. It is to this phase of the subject that I invite your attention and upon which I desire to discuss several factors. Before taking up the subject of preventive measures we must, naturally, turn our attention to the causative factor or factors of this disease; and here, unfortunately, we meet with a serious set back, for up to the present time no definite causative agent has been isolated. While it is generally admitted and presupposed that scarlet fever is dependent upon the activity of some microorganism, absolute proof is lacking. The blood, urine, tissues, and epidermal scales have been carefully studied but the scarlet organism has not been found. Klein speaks of a micrococcus or streptococcus in the blood and tissues, Pfeiffer of plasmodia in the red blood cells, Mallory of a protozoon in the skin, and others of a toxine in the urine to which the name scarlatinine has been given. Dr. Ernest C. Schultze, from investigations conducted in the laboratory of the Health Department, believes that a staphylococcus is the causative agent and that scarlet fever can be diagnosticated at times before the rash, by means of a culture or dried smear.

One great and important reason for the spread of this disease is the refusal on the part of parents to be convinced that very mild cases can possibly be scarlet fever and to the belief—fostered unfortunately by some of our profession—that scarlatina or scarlatinal rash is of less consequence, less contagious, and less dangerous than scarlet fever. How frequently do we hear from mothers that the doctor said the child did not have scarlet fever but scarlatina, meaning, I presume, a "little scarlet" or a "touch" of the disease. The laity has been so accustomed to associate scarlet fever with a marked rise of temperature, severe sore throat, a uniform and extensive eruption, and a general feeling of ill being, that they hesitate to accept any opinion of scarlet when the symptoms are of a very slight character. For my own part, in private practice, I have always felt easier in a sense, when the symptoms were pronounced, not only because of the satisfaction as to diagnosis from the parent's standpoint—and my own—but because of the greater possibility of isolation. There can be no question but that these mild and often unrecognized cases are the greatest carriers of contagion. Were it true that a mild case would but cause a slight attack in a second predisposed person the matter might deserve less consideration. But so long as the fact remains that the mildest type in one individual can produce a virulent and, perhaps, fatal form in a second person, so long must we exert every effort toward preventing the spread of this disease. And under this heading I might mention errors in diagnosis on the part of physicians and the diagnosis by parents of "spoiled stomachs" (initial vomiting) and "stomach rashes." There is no disease which admits of an easier diagnosis in typical cases and none which baffles us so much in atypical instances. No one with a large experience hesitates to state that at some time or other he has been in doubt or has erred in his diagnosis of this disease. As McCollom remarks: "There are cases, however, in which the symptoms are so slight that it is impossible, no matter how much experience a man may have had, to decide definitely for or against the existence of scarlet." But given a suspicious case it is better to be careful than to be sorry and to isolate until at the expiration of twenty-one days from the onset there is no evidence of desquamation. The error of diagnosis on the part of the parents is only too common, and we all have been called to cases of acute nephritis three weeks after the mother noticed what she called a "stomach rash" just as we have had opportunities for excluding from the school room cases with pronounced desquamation.

In the summer of 1907 an interesting case in private work attracted my attention. I had under my care a boy of fifteen with a very decided attack of scarlet fever—high temperature, membranous angina, pronounced eruption, and general depression. At the very onset of his disease his two sisters were removed to an aunt's house free from scarlet, and for three and a half weeks no sign of disease appeared in either. During the entire period of the boy's illness his constant companion in and out of bed was a black house cat. On several occasions I advised the mother to have the cat removed by the Society for the Prevention of Cruelty to Animals, but she decided to "wash it" and send it to the aunt's house because the "girls were so fond of him." This she did and in five days one of the sisters was down with scarlet fever. In little Italy, every family is the possessor of at least one dog to say nothing of cats; these animals, like their masters, journey from floor to floor and from room to room, and who can gainsay but that they are carriers of contagion? In this connection the recent recommendation of the Department of Health as to the dangers of these animals (dogs) and as to the advisability of destroying all stray ones as a menace to public health and safety might have a practical bearing. I cannot, at this time, discuss the statement of Thomas that "a disease corresponding to human scarlet has been met with in horses, dogs, cats, swine, and other domestic animals." In passing I might mention the possibility of flies acting as intermediary hosts in the spread of the disease.



Cases of scarlet fever in Boston, by months, reported to the Board of Health from 1890 to 1904.

It has been said that schools are one of the greatest factors in the spread of contagion. Holt says: "Schools are the hot beds for the spread of scarlet fever." Be that as it may, it is certain that the more complete the method of medical inspection of school children and the greater the cooperation of the principals and teachers the less the likelihood of the spread of scarlet through this channel. In speaking of schools McCollom writes: "During July and August when the schools are not in session, the number of cases is very much less than during November, December, and January; the increase commences in September and there is a marked increase from September to October, from October to November, from November to December; December and January are practically the same. There is a diminution from January to February but no perceptible diminution in March, April, and May as compared with February."

It must be remembered, however, that during the months of June, July, and August the tenement population have their windows open all the time, in contrast to the poorly ventilated and "concentrated" room atmosphere of the other months.

The present organization of medical school inspection in New York city under the Division of Child Hygiene is such as to reduce to the lowest possible minimum contagion from this source. With the regular daily visitation of all schools, the sending to the inspector of all cases that have been absent, the visiting at home of suspected patients, the reporting of suspected cases by nurse, charity, and settlement workers, the instruction of principals and teachers by a system of lectures upon the salient and easily detected signs and symptoms of true and suspected contagious diseases, the prospective distribution of a small comprehensive compend on the subject to teachers—all this is organization which leads in the direction of prophylaxis.

For many years the belief has been almost general that the offending agent of this disease existed for the greater part in the exfoliated scales from the skin; in other words the laity and most practitioners considered the desquamation as the main carrier of infection. Aaser, of Christiana, reports that about two per cent. of his cases were infected by patients discharged from the hospital after a thorough washing and disinfection of the head and body and after desquamation had ceased for from one to five weeks. He states that too much stress has been laid upon the exfoliation and that in many cases children freely desquamating have failed to convey the disease. He believes that in some cases the main source of infection is some local affection of the nose, throat, and ear associated with discharge.

There can be no doubt that the secretions from the throat during the early days are perhaps the greatest factor in the spread of the disease and that all nasal and aural discharges are dangerous as long as they exist. At the same time I am as yet unwilling to exclude desquamation entirely as one of the causes of contagion, for there is proof that the scales *per se* may cause the disease. Thus, the following history case quoted by Filatow is interesting:

"A widow living with her daughter in a *scarlet free town* of Brittany received a letter from a former governess of her daughter. She wrote of her recovery from scarlet fever, of her desquamating at the time, so much so that she was forced several times to shake from the letter the scaly particles. Several days after the receipt of this letter mother and daughter were taken ill with scarlet fever, the mother dying and the daughter recovering after a severe attack." I am free to confess that I believe in the contagiousness of scarlet by means of desquamation, although I consider this source far less dangerous than the discharges from the nose, throat, and ear, or the acute skin eruption. My belief is founded not only upon reading and experience but because of the following observations which have appealed to me. Why is it that the palms and soles which are seldom if ever affected with the rash, at least not markedly so, desquamate in almost every case of scarlet however mild? Surely not because desquamation is secondary to the rash, since there is usually no eruption in these situations? It seems to me that it is because scarlet is a general constitutional disease producing its effects upon the entire organism and that the palmar and plantar desquamation is evidence of infection and irritation *from within*. If that is so, then I believe that the results of this process—the desquamation—can carry with it the element of contagion. And again, why is it that a profuse generalized eruption often desquamates slightly while a mild eruption is sometimes followed by a very profuse and persistent exfoliation? And why are so called cases of *scarlatina sine eruptione* followed by desquamation and nephritis (Henoch) if not because the infection produces irritation from within.

And if the scales themselves do not contain the offending agent, who can vouch in any given case that they have not been contaminated by the virulent and tenacious "germ" containing discharges from the mouth, nose, and ears?

In different countries at different times—Marylebone, England, in 1885, and Evanston, Illinois, in 1907, for example—epidemics of scarlet fever have been reported as traceable to the milk supply. In private practice and especially among the poor, the question of *infection from milk bottles* forces itself upon us, when we note how very few people attempt to wash the bottles thoroughly or to boil them before returning them to the milk man. That this has a practical importance is shown by the article of Dr. H. B. Wood (*New York Medical Journal*, December 19, 1908) on Scarlatinal Epidemic from Infected Milk Bottles. In New York city the Department of Health requires from all its inspectors a prompt notification of all cases of scarlet fever in which members of such families come in contact with milk which is sold.

Incomplete isolation on the part of the parents is a factor in the spread of this as of the other contagious diseases. They do not seem to realize the need and importance of confining the patient to one room during the entire period of the illness. There would be fewer cases of scarlet if the laity were educated up to the careful isolation of the affected one, care in the boiling or destruction of articles coming in contact with the patient, plenty of fresh air and light and other general rules of nursing.

In a small percentage of cases, scarlet fever is ushered in by membranous angina, the eruption not appearing for thirty-six to forty-four hours; often the physician is not called in time to see the rash, and the cases are diagnosticated and reported as diphtheria. The practice of the Department of Health in following up three weeks afterward all cases of clinical diphtheria in which no Klebs-Loeffler are found has been instrumental in detecting and isolating a certain percentage of true scarlets.

Hospital isolation as a factor in causing some of the cases, has been under discussion for some years. To quote Dr. John E. Loveland:

> In this connection we should mention the fact that of late there has been much discussion in England over so called return cases of scarlet fever, the claim being made that patients with scarlet fever after long detention in an isolation hospital and careful inspection and disinfection on their debut from the same, were more likely to cause secondary cases on their return home than were patients that were treated at home; and further it was claimed that the secondary cases that were infected by hospital returns were apt to be malignant. So frequent were these hospital infections that the idea was seriously entertained of doing away with isolation hospitals altogether. To remedy the trouble, the idea of isolation hospitals within isolation hospitals was conceived; in other words the convalescent patients were kept in separate wards and extra attempts made to render the patients and their surroundings as clean and aseptic as possible.
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> The theory of return cases—at least one theory—was that any nasal, throat, ear, or glandular discharge, became permeated with the organism of scarlet fever and that the organism remained a long time in the nasal passages or other parts as is true of the bacillus of diphtheria.
>
> The cases subjected to home treatment were likely to live in an atmosphere of less concentrated infection and thus were not loaded up, so to speak, with the organism of the disease.

A word upon the relation of vaccination to scarlet fever. Whatever may be the portals of entry for the scarlatinal virus it is certain that open wounds offer a favorable soil for its implantation and development. This fact has been brought out by Dr. Charles Herrman in his article on The Infection with Scarlet Fever through Open Wounds. Of course when scarlet fever is prevalent in any locality it is very difficult and at times impossible to trace the relationship between the infection and the site of vaccination. I believe it to be absolutely unpardonable for any one to vaccinate in a house in which a placard shows that scarlet exists therein.

While no positive assertion can be made as to the point of entrance or the initial station of infection, the tonsils have first call with the majority of clinicians. It therefore behooves us to heed the warning of Caillé given many years ago that "the special predisposing elements in children are enlarged tonsils, chronic nasopharyngeal catarrh, carious teeth. and an unhealthy condition of the mucous membrane of the mouth and throat." Here we see one important phase of the physical examination of school children as conducted at present through the Division of Child Hygiene of the Department of Health. By calling the attention of parents to the existence of the foregoing defects and their dangers, and by instruction in and the distribution of circulars on oral hygiene, much good is accomplished.

The lightheartedness of some individuals, as seen in the custom of giving clothing infected with scarlet virus to laundries and to others for washing purposes, is in no small way responsible for a certain number of cases.

Scarlet fever in the colored race brings to our attention several interesting facts. I have always been inclined to believe that many cases among this class were either unreported or unrecognized. From my conversations with inspectors whose districts embrace the colored sections so to say, I learned that it was most unusual for them to have under quarantine a case of scarlet in the negro. Figures collected from nine inspectors who during 1908—an epidemic year—covered the most thickly populated colored sections, showed that the number of cases of scarlet fever in the colored, under observation in the Borough of Manhattan during March and April, was four, and the total number of such cases in the colored seen by them during eight months was twelve. Is it possible or is it likely that in about two thirds of the 65,000 colored population of Manhattan there should exist in eight months only twelve cases of scarlet fever and that in a year when the disease was epidemic? It will be conceded that the colored race is not so susceptible to the disease as the white but I cannot conceive that this nonsusceptibility—almost immunity—should be so marked. Dr. E. P. Roberts who was kind enough to interview ten colored physicians who control most of the practice among this class, tells me that all of them agreed as to the relative infrequency of the disease in their race. Several of them stated that in some years only four to six cases came under their notice. On the other hand Frick (quoted by Jurgensen) in the Baltimore epidemic of from 1850 to 1854 found that for every ten thousand of the white population 13.8 were affected and for a corresponding number of blacks 10.8 were attacked. It is possible that because of the difficulties attendant upon diagnosticating the skin lesion some cases are looked upon as amygdalitis or clinical diphtheria, and are not segregated because they are not followed up; and in this race more so than in the white it is easy to understand how the mild cases might be overlooked. More through lack of recognition then, than because of failure to report, do I believe that these cases aid in the spread of scarlet fever. The colored people by virtue of their daily occupations as cooks, waiters or waitresses, laundresses, maids, porters, etc., have access to many homes, and if the disease is unreported or overlooked the inference is clear. The subject is one of importance and interest and deserves more consideration than has been given to it heretofore.

Dr. Roberts argues that the figures quoted by Frick were obtained in slavery days when the colored population was crowded together. If the congestion at that time was any greater than it is at present in some sections—San Juan Hill—it is difficult to picture it.

I have compiled a comparative table of scarlet fever in the white and colored population as found in districts containing two thirds of the colored element in the borough of Manhattan:

1908.

	Cases in the white.		Cases in the colored.	
Dist. No.	March.	April.	March and April.	September to March.
10	21	44	0	0
22	14	17	1	0
36	8	13	0	1
38	27	28	2	1
44	45	30	0	0
54	17	12	1	3
58	42	31	0	0
97	60	31	0	0
99	48	32	0	3
Totals in two months	White			520
	Colored			4

I have reserved for the last and most important factor the one which would seem to break the link of any safeguards we might try to establish against the spread of this disease—the unreported cases. While it cannot be estimated how many cases of scarlet fever are not reported by physicians and parents it is safe to say that the number is "enough." At the same time, owing to the activity of the Department of Health, the number of cases reported by physicians to-day is greater than heretofore, and this accounts to a certain extent for the large number of scarlet cases tabulated; the visiting of absentees by medical inspectors, the home visitations by the department nurses, the reports of settlement and charity workers and other interested persons also bring to light a large percentage of cases which otherwise would probably never have been reported. While therefore the figures bespeak an increase in contagion over former years, this increase is not so actual as appears at first glance. It is this factor of unreported cases which makes so many physicians halfhearted in the matter of fumigation and disinfection. Because some cases are unreported is no argument against taking active measures in those known to us, but it does diminish the chances of any great strides in preventing the spread of this disease. Most harm in these instances is done where the cases are hidden back of stores dealing in eatables, wearing apparel, and the like, for here contagion may be carried by many persons to diverse points. In our private practice we have all met with the very frequent request on the part of parents not to report a given case because the other children would be kept out of school. My invariable reply to these cases is firstly, will you pay my fine of fifty dollars if I am detected, and secondly, are you aware of the fact that it may be that the same request by some other parent and the granting of it by some other physician has made your child ill to-day? If the appeal to their higher sense of duty does not carry the day the appeal to their pocket books *via* the fine usually does.

With the knowledge that the foregoing conditions exist in almost every large city the question naturally arises what are we going to do about it? I must admit that in these days when the struggle for existence among the middle and poorer classes is so exacting, the problem is a most difficult one; in fact I am not so sure but what all our efforts will appear rather discouraging when results are tabulated. It must not be forgotten that it is often very difficult and at times impossible to trace definitely and surely the channel of infection so that, as Crandall states, "until a specific germ has been discovered and its life history studied we must rely on clinical evidence alone. We must therefore expect to find differences of opinion in almost every detail of pathogenesis, prophylaxis, and treatment."

There are certain remedies at our command, however, which the local health boards and practitioners might enforce or recommend and which I would suggest as follows:

1. The education of the laity by mothers' meetings, public lectures, magazine and newspaper articles as to the identity of scarlet fever, scarlatina, and scarlet rash, and to the knowledge that scarlet fever may exist in a very mild form in one and still convey and produce a malignant type in another.

2. Isolation of suspicious cases and observation for twenty-one days from the onset.

3. A thorough boiling of all milk bottles at home before their return to the milkman.

4. Immediate report to the Health Department of all cases where any member of a family in which there is scarlet, sells or handles milk.

5. Removal from the house by the Society for the Prevention of Cruelty to Animals of all cats and dogs that come in *direct and prolonged contact* with the patient. These to be returned after thorough cleansing with antiseptics.

6. Circulars of information such as are now printed in English might be issued in German, Yiddish, Italian, and Czech, for despite the fact that it is said that foreigners always get some one to read the English, far better results are obtained when they are appealed to in their mother tongue.

7. When cases of scarlet fever are found in a classroom, be it in the early or desquamative stage, I believe it wise and prudent to order fumigation of that particular room and its wardrobe. I recognize that this would entail a larger corps of disinfectors than is at the disposal of the Department of Health at present, but the city authorities should recognize the importance of the situation.

8. Have school books, house books, toys, etc., subjected to fumigation at home first, and then treated, as the bedding and carpets, to steam disinfection or destruction. Circulars of information should state that books are to be exposed at the time of fumigation and inspectors should note this fact on their fumigation order.

9. It would be well to have each class provided with a card, prominently displayed, setting forth the name and address of all children in that class in whose families contagion is reported and to "cancel" each name when the child returns with its Health Department school certificate. In this way the danger of such children coming to school in the absence of the regular teacher would be less likely to ensue.

10. Greasing of the body with petrolatum, lanolin, or ichthyol ointment (Siebert) from the very beginning of desquamation, and the giving of warm baths as suggested by Filatow will minimize the dangers from this source. Dry scales fall from the body more readily and are more easily disseminated as dust all over the room, while the greasy particles cling to the surface and are removed in the bath or in sponging.

11. Fumigate all the infected rooms in a case of scarlet fever. Urge careful isolation in *one* room.

12. Note at the first visit all the bedding used by the patient and see that it is given for disinfection at the termination of the case.

13. Urge early treatment for enlarged tonsils, adenoids, carious teeth, and nasopharyngitis.

14. Purulent and other discharges from the ear, nose, and throat, or from infected glands are to be treated antiseptically, collected on cotton or small cloths, and placed in paper bags which are to be burned. They are to be looked upon as active sources of contagion until they have been completely cured.

15. Since we know that the virus of scarlet fever

is possessed of great tenacity and life energy, and since we know that under favorable conditions of "aerial stagnation, moderate temperature, and absence of sunlight" it may remain in articles of clothing and rooms for a very long time, it is clearly indicated to have the rooms well ventilated, at a moderately low temperature and provided with plenty of sunlight.

16. A general notification of undertakers as to their duties and responsibilities in contagious cases and the enforcement of punishment if the rules are disregarded.

17. The adoption and enforcement of the order of the Health Department not to vaccinate in any house placarded for scarlet fever.

18. It might be advisable to have several isolation wards in the Department hospitals for scarlet fever and to place patients in the convalescent stage in a second and third room, the second to be aired all day and the third all night. Theoretically at any rate there is something in the attenuation or dilution so to say of toxines and I have never forgotten how Delafield in his lectures on typhus fever spoke of "fresh air and windows open all the time irrespective of the weather" as diminishing the danger of contagion and lowering the potency of the poison.

19. The adoption of stringent measures whereby the concealed cases would be brought to light. This is a most perplexing problem and one to which great thought must be given.

20. Urging upon the city authorities the need of a sufficient fund to the Department of Health for the services and equipment of a large and efficient corps of inspectors and disinfectors to properly carry on the work under the present exacting conditions.

140 West One Hundred and Twenty-second Street.

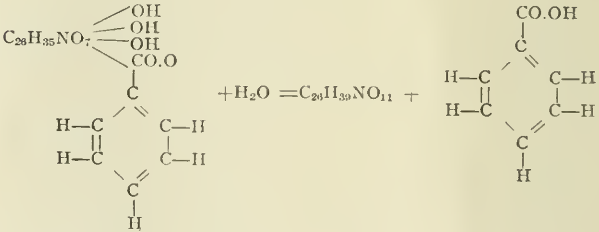
ACONITE.

"Queen Mother of Poisons" ("Wolf's bane"; "Leopard's bane"; "Women's bane"; "Venus's Chariot"; "Scorpion"; "Monkshood"; "Blue Rocket"): Its Place in History, in Mythology, in Criminology, in Botany, in Therapeutics, and in Toxicology.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I., M. R. I. A.; etc.,
Dublin, Ireland.

(*Concluded from page 626.*)

The well known reputation of aconite would very inevitably have the effect, among many others, of providing the popular imagination with numerous antidotes in those times when the curative effects of faith or of fancy were rarely submitted to critical examination, and almost never to scientific tests. The separation and identification of "active principles" existed only in the unprophesied dimness of a remote futurity; while the almost miraculous precision and reliability of "Stas's process" had never been approached by any of the too dreamily imaginative alchymists of the older centuries. It is, however, interesting to note that the more concentrated virulence of the root of the aconite plant was known to the "Father of Modern Therapeutics" about the middle of the sixteenth century. Indeed, the crystalline "active principles" (*alkaloids*) have been supposed to display a distinct sedimentary or gravitational tendency in the circulatory economy of the plant whose juices are richly endowed therewith. *Aconitin,* the most powerful in its lethal properties, was apparently separated by Brandes; although, pretty surely, in a very crude form. Then it appears to have been isolated in a state of tolerable purity by Hesse, in 1833. But, from the standpoint of the purely modern investigator of the chemical compound, aconitin, all researches and results associated therewith may nŏw be regarded as matters of merely antiquarian, or historic, interest down to those obtained by Duquesnel in 1870. That accomplished chemist and pharmacologist appears to have been the first to succeed completely in the effort to isolate the alkaloid in a state of chemical purity. His experiments and results led him to assign to it the formula, $C_{27} H_{40} N O_{10}$. Subsequent researches, however, led to the adoption of $C_{33} H_{35} N O_{12}$ as the true representation of the contents of the aconitin molecule; and this would seem to have been ever since accepted with as fair a show of hands of the representative scientific specialists in this department of toxicological chemistry, as is usually obtained in a verdict on a complex question which is rendered by a cosmopolitan jury of "experts." Further investigation led to the conclusion that the molecular group includes the "*benzene nucleus,*" to which so large a proportion of the "constitutional" formulæ of the "new chemistry" owe their existence; for it has been decomposed by certain reagents into *benzoic acid* and *aconin,* another compound of alkaloidal structure. And the latter has, in turn, been supposed to behave as a *tetraphenol* of which aconitin is the *monobenzoic ether:*

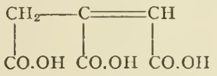


Aconitin. Water (of hydration). Aconin. Benzoic acid.

From the *A. ferox* of India a distinct alkaloid has been obtained, which successively received the appellation of *pseudaconitin*—with a formula of $C_{36} H_{49} NO_{12}$—and *nepalin* (the latter being derived from the geographical name of the region which furnishes the plant in greatest quantity). It undergoes decomposition when treated with the reagents which affect aconitin; but then yields in the process a distinct alkaloid, *pseudaconin*—with a formula of $C_{27} H_{44} NO_9$ while benzoic is replaced by *dimethylprotocatechic acid.*

Still it would seem that the central core of the heart of the (physical) mystery of aconitin has not even yet been plucked out. Its solution used to be described as lævorotatory, but the experiments of Dunstan and Ince in recent years have led to the announcement of a definite dextrorotatory property; and still another scientific complication was also introduced by the announcement, by Richards and Rogers, of the discovery of *two isomeric* aconitins, differing widely in their toxic properties! Accordingly, I have been led to the conclusion that it would probably be better, in the interest of clinical (and even of toxicological) enlightenment, to await the clearance of the scientific atmosphere of this region before entering upon further emphatic discussion. One thing appears to be absolutely certain: The last word has not yet been said on the structure of aconitin—either chemical or physical.

The *aconitic acid* with which aconitin appears to be associated in the living plant has been proved to have the structural composition which is represented by the "constitutional" formula—



$$\begin{array}{ccc} CH_2 - & C = & CH \\ | & | & | \\ CO.OH & CO.OH & CO.OH \end{array}$$

—and is, accordingly, isomeric in composition with trimethylenetricarboxylic acid. And we here meet with a somewhat curious coincidence, in the fact that some of this acid has been proved to be present in the sugar cane and in beet root.

The very peculiar, even artistically interesting, aspect of the flowering head of the *Aconitum napellus*, to which it owes its popular appellation of "monkshood," is, of course, well known to every one who has taken even the most superficial interest in botanical curiosities. In the crystalline verbal reproduction of the French botanist: "Les fleurs bleues forment une groppe terminale. La calice coloré, pris communément pour la corolle, bleu, quelquefois blanc dans l'aconit napel, jaune dans autres espèces, est composé de cinque sepales très inégaux, dont le supérieur et postérieur est en forme de capuchon. En reversant ce capuchon on découvre deux filets rappelant deux étamines, mais que ne sont que des rudiments de corolle, terminés chacun par un petit capulet. Avec un peu d'imagination, le sépale ainsi renversé peut être comparé à un char, les appendices qui terminent les deux pétales à un attelage de deux colombes, d'ou le nom de *char de Venus*."

It has been observed—and a distinctive reference to the fact is furnished by that version of the etymology of the name which appears to be the most plausible one (=earthless; from prefixing of the negative particle, α, to χονις = dust)—that while *Aconitum napellus* will flourish in all soils and climes, it prefers the rocky and dry positions, so that it is found to thrive most conspicuously in mountainous regions, and at the moderate elevations of these. Accordingly, the Swiss aconite is still generally believed to be the best. Generally speaking, however, the southern countries have been observed to yield more active specimens of this plant than do those of the north. We also find the report accepted that the wild growth is richer in its supply of active constituents than the cultivated one. These facts were noticed and recorded by Matthiolus himself, and have been corroborated by successive generations of modern observers ever since his time. Schroff found that the plant was more active—physiologically and toxicologically—before flowering than after; an interesting botanical fact which is, pretty surely, dependent on the upward trend of the stored-up active principles, from root to flower, at the season of renewed vegetative activity.

When we descend to the records of recent botanical discovery and classification, we find De Candolle arranging 107 known varieties of the genus Aconitum in 22 species, which in their turn are classified in 4 sections. And H. Baillon, the great French authority on medical botany, disposes the various species of this genus which he found to have been utilized in therapeutics in a corresponding number of sectional compartments. Of these the first is represented by our *Aconitum napellus* (of Linnæus = *A. vulgaris* of Clusius). The cognomen of *Napellus* we find to have been assigned thereto on account of the distinctive fact that the root expands "en un reservoir de sucs napiforme." (The discovery, by Wallich, of the source of the Hindu poison, *bisch*, has added the *A. ferox* to the catalogue of monk's hood varieties. The Japanese aconite, *A. fischeri*, constitutes a still more recent acquisition to the list.) The second is the *A. anthora* (Linn.), which was regarded by Clusius as a distinct genus. The third is the *Cammarum* (*A. penniculatum*) of Lamarck, which was the *Lycoctonum autumnale* of the older botanists. The fourth is the *lycoctonum*.

The number *four* would, indeed, almost appear to possess some specific attraction for the scientific investigators of aconite. We find Fleming, in his very carefully finished thesis on this subject, not merely arranging his specimens in the four sections of De Candolle, but also tabulating the symptoms and signs of their physiological effects—in therapeutic and in poisonous doses—in four carefully differentiated compartments, according to the "degree of operation" (consequent on magnitude of dose). A fact of this connection is also worth noting, from the same authority (writing in 1845), as specially illustrative of the peculiar and dangerous uncertainty which has always overshadowed the properties, as well as the identity, of the most deadly member of the vegetable kingdom of Nature; it is that: "The A. panniculatum has been adopted by the Dublin and London colleges, on the supposition that it was the species used by Störck. I have distinctly ascertained, however, that it is totally inert; an observation which Dr. Christison has fully confirmed." The significance of the peculiar influence of Baron Störck in connection with aconite and its applications, which is so very obviously implied in this quotation, requires to be understood by all readers who would have clear ideas on the therapeutic history of aconite. For the inauguration of the more definitely modern clinical employment of the preparations of this plant is undoubtedly due to the experimental researches and consequent recommendations of that eminent and enthusiastic physician. It was in 1762 that he published his *Libellus quo demonstratur Stramonium, Hyoscyamum, Aconitum non solum tuto posse exhiberi usu interno hominibus, verum et ea esse remedia in multis morbis maxime salutifera*—a small volume which soon displayed an epoch-making influence on Continental practice. An even approximately corresponding degree of recognition was not established in the British Islands till after the best part of a century had elapsed from that date; and this fact was in great measure due to the uncertainty associated with the connotation of the term *aconite*—as the above quotation from Fleming indicates, I think, very clearly. Störck believed that this vegetable agent had a *specific influence* on the *skin,* and *certain nerves;* and accordingly recommended its use in various important cutaneous and neuralgic affections. He also reported great benefit from its employment in many acute inflammatory and febrile diseases. His remarks on *rheumatism* in this connection furnish an interesting specimen of the more advanced pathology of the eighteenth century. "Aconiti extractum esse innocuum et valde efficax medicamentum. Parva dosi præstat id quandoque, quod alia fortissima remedia, magna dosi et longo tempore exhibita, efficere nequeant. Acre, quod circa articulos, tendines et ossa hæret, irritat nervos, excitatque summos dolores, solvitur inde, agitur in motum, et per urinam, vel alvi fluxum, vel sudorem, vel insensibilem transpirationem, ex corpore ejicitur." It is, of course, essential to scientific fair play that in perusing such record of some of the clinical experiences and conceptions of one of the recognized intellectual giants of a long past generation, the critical reader should charitably bear in mind that nobody then even remotely suspected that the phenomena of rheumatism were generated by the presence of a microbe, or that this disease would be proved—microscopically, if not quite logically—in a future, and more enlightened, epoch of scientific culture and progress, to belong really to the group of *infectious* fevers!

One of the special privileges which the writer of this article has made bold to state, with what he hopes that his trans-Atlantic brethren will regard as "an honest pride" rather than a merely tolerable vanity, is to call their special attention to the fact that the revival—indeed the origin—of our modern scientific knowledge of the toxicological properties and the therapeutic value of aconite originally emanated from a Dublin source. This new epoch in the evolution of the scientific history of lethal simples was ushered in during the early forties of the nineteenth century—an era in which the Dublin School of Medicine produced, and represented, the foremost of the important advances and discoveries made in clinical medicine—and in the various sciences germanic and ancillary thereunto. In the medical section of the generation which represented our Irish metropolis in that decade the foremost English-speaking physicians of their time were to be found. And from its then unique galaxy emanated a light which illuminated the dark and labyrinthine ways of mysterious and malignant aconite. "Mary Anne McConkey was indicted before Mr. Justice Torrens at the Lent Assizes, Monaghan, 1841, for the murder of her husband by the administration of *corrosive sublimate*, mixed with greens." Thus opens Professor Geoghegan's account of the epoch-making case in which he appeared as an expert witness, and of which he informs his readers in the course of the introductory paragraph that:—"The substance considered by the medical witnesses as most probably administered, and which the subsequent disclosures have shown to have been that employed, was monkshood, a poison which the records of toxicology and medical police indicate as rarely taken in fatal quantity, and one which, so far as my information extends, has not hitherto formed the subject of a criminal investigation in these countries." A special poison was named in the indictment because a weak solution of it had been found in the prisoner's possession. Dr. Geoghegan states: "The opinion given by me and embodied in the Crown counsel's brief was, that 'the medical facts were more conformable to the supposition of vegetable poison, and that monkshood was capable of producing the symptoms and rapid death observed.'" And he further tells us: "My attention was drawn to *monkshood* as the special substance employed by a rumour prevalent among the peasantry in deceased's neighborhood, that he had been poisoned by 'blue rocket.' [A striking instance, I feel constrained to remark, parenthetically, of the almost inspired accuracy so often displayed in the popular 'rumours' and 'reports' of the Irish peasantry; as those who have had much experience of Irish country life can hardly have failed to notice.] I was led, by reflection on the nature of the symptoms, to the suspicion that the plant so designated might be the *Aconitum napellus*, the flowers of which are well known to be blue. I ascertained this to be a fact by exhibiting to the witnesses a drawing and carefully preserved specimen of the plant in flower, which was at once recognised by them as the 'blue rocket,' and which it appears is well known amongst the peasantry and others in Monaghan and the neighbouring counties." And the writer proceeds to inform us of the following very interesting facts, which will, I venture to hope, interest my readers sufficiently to induce them to regard a full length quotation worthy of perusal:

"The general acquaintance of the peasantry with this plant is to be traced to the circumstance that its flower formerly constituted one of the elements of decoration in party processions, and also to the extensive employment of its root by the northern horse-jockeys, who have attached to it the conventional designation of 'the root.' These persons resort to it largely in the operation of 'figging,' which consists in the introduction of a mixture of the bruised root and chewed ginger into the horse's anus, in order to render him lively, previous to sale, a result which it effects by its irritant action; the consequences of this process are, however, occasionally untoward, as the animal is not uncommonly affected by twitching, and partial paralysis of the hinder extremities. The irritant effects are generally combated by the introduction of a mould candle into the anus. The above use of the plant is so well understood by the horse-jockey that a piece of the 'root' is carried in his waistcoat pocket as a sort of indispensable implement of the trade. I found also, by inquiry from the witnesses, that they were aware that the plant is poisonous, and that 'it would blister the mouth if chewed'; that it grows commonly in the gardens near deceased's residence; and that they had heard of individuals in their country to whom it had proved fatal. I also learned that deceased was acquainted with its properties, having informed one of the witnesses about three months before his death that he had known it prove fatal to a horse-jockey, who, having chewed it in mistake for ginger, was taken ill and died in the same night. A gentleman resident in the County Monaghan has also mentioned to me an instance which occurred in his neighbourhood, in which a horse-jockey's child, who was in the habit of taking ginger out of its father's pocket, unfortunately on one occasion encountered 'the root,' and having eaten it, 'died the same night in great pain.'"

And among the many items of invaluable information supplied in this connection by the eminent Dublin medicolegist in the same paper is the following note:

"In a return furnished to the House of Commons, 'of all the inquisitions held in cases of death by poison in England and Wales during the years 1837 and 1838,' it appears out of 545 cases two only were caused by monkshood, and both accidental. In an account of the statistics of poisoning in Denmark, out of ninety-nine cases in five years there is not one by monkshood. (Zeitschrift für die gesammte Heilkunde, Sept., 1839.) A comparison of this statement with the English return is interesting, showing that while, with us, opium and arsenic are the most usual poisons, in Denmark, poisoning with the mineral acids vastly preponderates."

And in a subsequent paragraph of that communication he gives the following account of two instances of poisoning, which I regard as not only important in connection with the symptomatology and toxicology of aconite, but invaluable in the enlightenment conveyed in connection with the matter of mistaken identification which is so peculiarly associated with the history of this weirdly noxious vegetable:—

"Through the politeness of the coroners for Manchester and Leicester, and of my friend, F. Fullagar, Esq., of the latter town, I have obtained the following particulars of the two cases of death from monkshood, noted in the parliamentary return; both of them occurred in the month of March, when the *plant sprouts up like young celery, for which it was in both instances mistaken* [italics by the writer of the present article]; in both also the root was the part eaten. In Mr. Fullagar's case, the sufferer, a man, aged 56, had died before his arrival; the symptoms ascertained were heat of tongue and throat, which supervened during eating, vomiting and purging, sensation of swelling in the throat and over the body generally, subsequently lock-jaw and insensibility, with slight convulsions before death, which took place in an *hour and a quarter* from the period of the meal; the quantity eaten was 'a handful'; his child also partook of the root, but found it so acrid that it ate but little, vomited well, and recovered.

"The Manchester case was that of a boy seven years old; the symptoms ascertained were—a remarkable *sensation of swelling of the face,* clinching of the hands, and convulsions, which became very violent previous to death, *which occurred in two hours;* the quantity taken not ascertained; in neither case was a post mortem examination held."

But the truly providential item of scientific evidence which gives an extraordinary value to Geoghegan's paper is that the McConkey case included a simultaneous ("test-") case which terminated by recovery. The report of each is so graphically conveyed, and possesses an importance so absolutely unique in the history of the growth of our knowledge of the most virulent of poisons, that I venture to hope that no apology is necessary for quotation at full length:

"On the 31st July, 1840, between one and two o'clock, the prisoner, her husband, the prisoner's father and a neighbour (M. A. Johnston) being in the house and about to dine together, the prisoner went out for salt and returned shortly bringing some in her apron. There was a pot boiling on the fire, from which she took a quantity of greens and placed them in a smaller pot, she then fried some bacon in a tin porringer, and prepared the greens on a table beside the dresser on which she had laid the smaller pot. During this proceeding the prisoner had her back to the rest of the company, and was so situated as to be screened from observation. Having made ready two plates of greens she presented one of them to her father, and the other to her husband, who also partook of some new potatoes which had been cooked in a boiler. The prisoner herself partook of the greens *remaining in the pot in which they had been boiled,* from which she also furnished some to M. A. Johnston, who ate what she received. A neighbour, George M'Meighan (father of M. A. Johnston), came in when dinner was nearly over, and, on the invitation of the prisoner, sat down with the rest. The deceased having eaten *the greater part of what he had been helped to* complained that the greens had a 'wild, bad (or sharp) taste,' to which the prisoner replied, that 'she did not know what bad taste they could have, unless a leaf had been boiled in them,' and added 'that they were the wildest and hardest that they had had that year,' and that 'she would give them to the pigs.' This the deceased would not permit her to do, but desired her to give what he had left to M'Meighan (who had been previously in excellent health), stating that they would be a novelty to him. Prisoner was unwilling to give them to M'Meighan, but at length did so, saying, 'that there was dirt in them'; and at the same time helped him to some greens from the pot out of which *she was eating,* placing them on the side of the plate next what her husband had left. M'Meighan ate, in the first instance, prisoner's helping, which had no *disagreeable flavour,* remarking to deceased, when the latter complained of the flavour of what he had eaten, that 'it must be the taste of his (deceased's) mouth, as his (M. M.'s) greens were good.' It should be mentioned here that neither the prisoner, her father, nor M. A. Johnston *complained of any disagreeable flavour in the food,* nor were they *in the least unwell after partaking of it.* M'Meighan having consumed the prisoner's helping next finished what the deceased had left (a tablespoonful), and in about *two* minutes felt a burning in his mouth,[1] throat, gullet, and stomach, unaccompanied by any constriction of the fauces; shortly afterwards he experienced a sensation of swelling of the face, and inquired of a neighbour if it were so, who replied in the negative; he also had a general feeling of numbness and creeping in the skin. Having gone home he suffered from most distressing restlessness, followed by dimness of vision and stupor almost amounting to insensibility. About an hour after the meal he was found by a neighbour speechless, frothing at the nose and mouth, the hands and jaws clenched, appearing occasionally as if dead (syncope), and again reviving. After a lapse of another hour or so (two from the time of meal) he was seized with vomiting of a green matter, from which he experienced *considerable relief;* there was also some purging. Between eleven and twelve the same night he was seen by Dr. Hurst, who found him labouring under vomiting and purging, tenderness of the epigastrium, cramps, tingling of the flesh, and burning taste in his mouth. He was not sufficiently well to leave the house for three days, and five weeks elapsed before he was able to resume his usual employment.

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[1] The symptoms above given are those stated on the trial; the following additional ones I had an opportunity of eliciting by inquiry from the witnesses: Copious flow of saliva shortly after the meal, with a sensation of numbness, roughness and prickling in the mouth, coldness of the surface, cold sweats, diminution of the restlessness after vomiting, thirst and subsequent general soreness of surface; for a considerable time (some weeks) he experienced also "a feeling of lightness in the head" after getting wet.

"The deceased was not seen during life by any medical man; about an hour, however, after the commencement of his complaints (at dinner) he was visited by two of the witnesses, who found him labouring under vomiting of a greenish matter, purging, excessive restlessness (indicated by frequent jumping in and out of bed), occasional incoherence, locked jaw, frothing (white) at the mouth and nose, and clenching of the hands. His sufferings were terminated by death at five o'clock, a little more than *three hours* after he had partaken of the greens.[2] The individuals by whom he had been visited, and who had previously seen M'Meighan, were struck by the similarity of the symptoms in both cases. In addition to the moral *circumstances already related, it appeared that,* during deceased's illness he indignantly repelled his wife's attentions, and broadly insinuated that he had been poisoned; the prisoner constantly removed the vomited matters and carried them out of the house."[3]

Such are the ascertained details of the earliest case of aconite poisoning which came to form the subject of a criminal investigation in the British Empire. The prisoner was convicted, and before execution confessed having poisoned her husband with the root of the "blue rocket." The latter had been "jealous of her, in consequence of a criminal intimacy which had subsisted for some time between her and a neighbouring individual." A ghastly illustration, surely, of the identity of the effects of unbridled passion on the Roman (*"noble"*) lady of the generation of Ovid (as referred to in the quotation above given from the *De Arte Amandi*) and the Monaghan country peasant of the nineteenth century! I need hardly point out to the appreciative reader the rare acumen—clinical, scientific, and critical—which enabled Professor Geoghegan to develop the evidence and secure the conviction.

Curiosity in matters relating to monkshood was now thoroughly aroused in the British Islands. Professor Christison of Edinburgh, who was then at the zenith of his toxicological fame, found it necessary to assume a leadership in the movement of progressive conquest; and, accordingly, we find that, under his immediate auspices, Dr. Alexander Fleming conducted an elaborate series of experiments, in the years 1842-3, on the toxicological and clinical properties of aconite. The results were given to the world in 1845. And in this latter year was published, too, in the *Dublin Journal of Medical Science,* the results obtained by Dr. Eades (of Dublin) in his investigation of the same subject; toxicologically on the lower animals, and therapeutically on the human subjects of various maladies. The former experiments had been carried out, in the course of the previous winter, "at a meeting of a few medical friends . . . . at Dr. Burton's, Kildare street"; and the writer's description and comment combine to produce a representative model of what physical observation and scientific comment should be. He distinguished the *sensory* paralysis, which really was produced by aconitin, from the *motor* which had been so generally—as well as erroneously—attributed to it, and with a vividness of differential diagnosis and lucidity of verbal reproduction which, so far as a rather extensive research has informed me, had never been attained by any of his predecessors in the investigation of this subject. His experiments were carried out by inserting aconitin "in the cellular tissue—of thigh and dorsal region of cat and rabbit, respectively"; and one of the earliest effects was, in each case, the appearance of "a thick, viscid mucus" hanging from the animal's mouth. No purging was produced, but loss of vision was a specially conspicuous symptom; it was also concluded that aconitin "does not cause stupor or convulsions; when the latter occur they take place a short time previous to death, and appear to be caused by a want of due circulation of the brain." The results so obtained led Dr. Eades to the employment of aconite in various neuralgic affections, in which it was found to give very great relief.

The publications of Geoghegan, Eades, and Fleming—and the embodiment of their toxicological data in the classic volumes of Christison and of Taylor—finally established the scientific and clinical position of aconite; with, however, the reserved complications dependent on the various strengths of the preparations employed. These were found to be most seriously perplexing: from the variety of standards used in different countries; from confusion of the species of aconite used; and from the varying proportions of the deadly aconitin present, according to the part of the plant selected before making the preparation. With regard to the factor last mentioned, it is of interest to note that the more concentrated powers of the root were emphatically indicated by Matthiolus himself. The mere holding of it in the hand till the root became warm in the grasp was productive of lethal result: "Tota planta pernecabilis admodum est. Sed radix ceteris partius atrocior adeo ut manu aliquandiu retenta, quo usque concalescat, tenentem perimat." And I will take, in passing, the opportunity of observing that a considerable portion of the knowledge imparted to his contemporaries by that encyclopædic pioneer in medical botany and therapeutics—flavored, as it often indeed was, with mythology and astrology—was very injudiciously lost sight of in subsequent centuries. Of the fatal importance of *the want of* a universal standard for the preparations and uses of a drug possessed of powers so deadly, an appalling object lesson was furnished in 1880 by an accident which endangered the lives of two patients and actually destroyed that of the prescribing physician. Dr. Meyer (of Winschoten, Holland) prescribed for a man of broken constitution aged 61, who was suffering from bronchitis; and referred the messenger to a special pharmacist. The latter had been in the habit of dispensing the *German* aconitin; but it so happened that, on this occasion, the pharmacist, whose supply of the alkaloid had just a short time before been exhausted, had actually replenished his store with some of the *French* preparation. Not knowing the all important fact of the great difference of strength, he dispensed the latter according to Dr. Meyer's prescription. Several doses were taken by the patient, who rapidly developed serious symptoms—very typical of aconitin poisoning—after each; they were always relieved by the vomiting, which did not fail to appear each time. Suspicion was naturally aroused, and:—

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[2] The following symptoms, which did not appear in evidence, were ascertained to have been observed: A constant complaint that his "heart was on fire," intolerance of pressure on the epigastrium; vomiting, at first the greens he had eaten, but afterwards bilious matter; face alternately pale and red, except shortly before death, when lividity appeared, coldness of surface, cold sweats. I am informed also by Dr. Hurst that after he was taken ill he wrote to an apothecary requesting him to send him something for a "dindling (tingling) through his flesh, and a biting like on his tongue." It will be observed that the above symptoms, taken in conjunction with those noted, in the text, are almost in every respect identical with the symptoms of McMeighan.

[3] One of the witnesses when examined at the Crown Solicitor's Office stated that she also scraped the floor with a spade.

"La femme du malade, très inquiète se rend avec le reste de la solution auprès du docteur Meyer qui, persuadé de l' innocuité de son ordonnance, prend aussitôt devant elle 50 à 60 gouttes du liquide, representant 4 milligrammes environ, et cela peu de temps après son diner. Les vomissements ne se produisent pas, par suite probablement de la paralysie générale causée par l'énormité de la dose; la mort arriva cinq heures après. L'autopsie fit constater des phénomenes de gastro-entérite de congestions hépatique, splénique et rénale."

It is an important as well as an interesting fact that Plugge, to whom the analysis was entrusted, failed to detect aconitin in a benzene extract of the viscera. (Dr. Meyer's other patient had a narrow escape with life after an unknown dose.)

In connection with the study of the effects of aconitin when taken on a full stomach, a very important feature has been brought to light by MM. Hottot and Liegrois, to which I would specially invite the attention of the physiological expert as well as of the general practitioner.

"C'est que l'état de répletion de l'estomac chez les animaux en expérience apporte moins d'obstacles à l'absorption de l'aconitine que cela n'a lieu pour certains autres alcaloïdes, la strychnine, par exemple. Ainsi, tandis que l'aconitine ingérée par un animal en digestion le tue à la dose de 1 à 2 milligrammes, la strychnine n'amène la mort qu'avec des doses de 2 à 4 centigrammes et plus. Ce résultat est bien l'effet de l'absorption plus prompte par l'estomac dans un cas que dans l'autre; car si, dans d'autres experiences comparatives, au lieu d'administrer ces alcaloïdes par la voie gastrique, on les introduit sous la peau, il suffit, pour tuer, de milligrammes et non plus de centigrammes de strychnine, et la mort est plus rapide après l'injection souscutanée de cette dernière substance qu'après celle le l'aconitine."

And, after a reference to M. Gubler's experiments on aconitine. we find Debout pointing out, in his lucid monograph on the subject, that: "Un de ses élèves, expérimentant sur lui-même, a remarqué que, lorsq'il prenait son granule de aconitine avant la fin de la digestion, il ressentait plus d'irritation gastrique que dans les circonstances inverses." This is, of course, by itself a most important clinical fact; and one to which, I think, too little attention has been called by the authors of our best known manuals of toxicology and forensic medicine.

The value of the observations made on themselves of the effects of aconitin by Dworzack and Heinrich—two of Schroff's pupils—can hardly be overestimated in this connection, undertaken and carried out to the end, as they were, under the supervision of the highest expert skill. Accordingly, Soulier's condensed version of their report is worthy of our best attention. It is as follows:

"Extrême amertume, persistante, avec sensation mordicante sur la langue, puis tout à coup sensation générale de chaleur surtout à la tête et dans l'abdomen avec explosion de sueurs. Sensorium graduellement troublé, fixation des idées impossibles; pensée paresseuse, vertige, perte complète de la mémoire. Après une dose de 3 centigrammes, la faiblesse de la mémoire persista plusieurs jours. Dans le domaine du trijumeau une sensation de contraction et de pression qui fit place à une douleur erratique, puis continue, que le plus léger effort d'attention, de réflexion rendait insupportable. Ces douleurs trifaciales avaient été précédées d'une sensation de fourmillement dans la peau de la figure d'abord, puis généralisée a toute la surface du corps. Dès le commencement de l'expérience mobilité spéciale de la pupille, tantôt étroite, tantôt dilatée, finalemente mydriase tres prononcée. Sensation pénible de compression au niveau des oreilles et bourdonnements.

"Pouls an début manifestement accéléré, puis ralenti au-dessous de la normale, petit, faible, de temps en temps dicrote.

"La respiration également baissait; avec les fortes doses elle devenait pénible, difficile, sensation de constriction de la poitrine et du con. Un centigramme provoquait de la toux avec expectoration facile et sensation de sécheresse au gosier.

"Muscles striés atteints; le moindre effort produit de la lassitude; flaccidité particulière des jointures.

"Aprés un temps très court éructations, coliques, nausées, vomissements. Muqueuse buccale, d'abord rouge, puis recouverte de vésicules blanchâtres ou jaunâtres; ptyalisme; activite renale manifestement augmentée, diurèse."

Soulier points out, in a footnote, that: "Il ne s'agit pas, bien entendu, de l'aconitine cristalisée qui se prescrit par quart de milligramme."

The usual effects of the administration of aconite and of its preparations—whether in medicinal or in toxic doses—are, of course, familiar to all readers. Accordingly it would be idle to proceed to rehearse them on the present occasion. But there are a few special signs and symptoms to the peculiarities of which most of the current authors have not appeared to me to accord the prominent significance which they deserve. That the preparations of this plant have a specific action on the trifacial nerve is a fact of which I have thoroughly satisfied myself—not only by clinical observation of patients under treatment but by experiments on my own person.

Accordingly, in the confusing deluge of synthetic "pain killers" and analgesics with which the present generation has been overwhelmed, I will take the opportunity of expressing the opinion that its great value in the treatment of cases of obstinate facial neuralgia has sometimes been undeservedly lost sight of, or forgotten. By its careful employment, externally and internally, I have often within the past few years been able to give relief to sufferers—most of whom had gone the rounds of the majority of our metropolitan hospitals with unsatisfactory results, and to at least three of whom the operation of *removal of the Gasserian ganglion* had actually been suggested! To the rather frequent occurrence of *trismus* and of *general convulsions* in cases of toxic dosage I would call attention: with special regard to the fact that, though often observed they are *not constant;* and. accordingly, not being characteristic, are actually more likely to mislead than to guide. The specific action on the salivary glands was demonstrated with peculiar vividness in Dr. Eades's experiments, in which, it will be remembered, the aconitin was not introduced into the mouth at all. The secretions of the liver and kidneys have been found to display considerable increase after the administration of large doses. The clammy, *viscid* perspiration has proved, to a certain degree, characteristic of the progress of the poisoning cases—although hardly sufficiently so to enable the observer to differentiate from average cases of painful shock due to one of many other causes. The effect on the *pupil* is decidedly remarkable: it was noticed by Dr. Eades; and the peculiarity of the effects displayed by its influence on the iris did not fail to elicit mutually contradictory reports from various (superficial) observers. It was noticed that direct application to the conjunctiva caused contraction of the pupil; it was also reported that in cases of advanced poisoning the pupils were always dilated. There was an apparent inconsistency: the old, old dispute regarding the color of the chameleon! Both were right, and the summarized account of Soulier may be finally accepted: "Ce sont d'abord des alternatives de contractions et de dilatations, un tremblement pupillaire avec tendance au myosis, qui correspond à cette première période d'ataxie que nous retrouvons toujours dans l'action de l'aconitine sur tous les appareils et systêmes, puis la pupille se dilate; cette dilatation doit être rattachée à l'irritation gastro-intestinale, soit a l'asphyxie." And we also find that, with regard to its action on the heart, and the precise cause of the fatal issue in case of an overdose, a very considerable amount of confusion seems to exist even at present date—in the minds of "the general"—somewhat of a quality similar to that of the apparently interminable uncertainty associated with chloroform. The very obvious depression of cardiac vigor has—almost unconsciously, it would seem—riveted thereto in the popular conception the notion of the mechanism of syncope. The fallacy has, of course, been long ago exposed, and exploded, by the methods of "scientific research." And it must interest the inquiring reader to have his attention called to the fact that in one of the experiments on the *corpus vile* of a condemned Roman criminal which was carried out early in the sixteenth century under the supervision of the "Father of Modern Therapeutics," the report of Matthiolus (already quoted in the opening paragraphs of the present communication) informs the reader of the progress of the closing symptoms: tandem obmutuit, & obiit simul, *livida facta facie ac si laqueo suspensus* [italics mine]. Our own Dr. Eades (to whose pioneer modern researches in this domain I have already referred) attributed the death of aconitin poisoning to *asphyxia,* and Fleming found, in the course of his experiments on animals, that in many instances, "the heart continued to beat for some time after death—in one case for a whole hour." In the examinations carried out by M. Laborde, there was displayed in the stomach, intestines, and liver, "un état typique, une coloration acajou très foncée, produit par une infiltration apoplectiforme. Les reins sont également le siège d'une congestion intense, apoplectiforme, comme celle du foie; sur les poumons, ecchymoses *larges* si l'intoxication a été prolongée; *ponctuées, identiques à celles de la mort violente par strangulation ou pendaison,* si la mort a été très rapide." Also, in one of the best accounts of aconite and its alkaloid with which I am acquainted, Soulier states, under the sectional heading of *Respiration*:—"Ce sont d'abord des troubles aux contractions irrégulières des muscles respiratoires, à leur état convulsif d'où des symptômes de suffocation rappelant ceux de la strangulation et de la pendaison, d'ou les ecchymoses sous-pleurales en pointillé ou par taches. *C'est par la respiration,* non par le cœur, que *l'aconitine tue,* d'où l'indication et les succes de la respiration artificielle. *L'aconitine,* probablement, *excite d'abord, puis paralyse le bulbe, le centre respiratoire.*" This author also indicates with special emphasis the observations of Laborde on the heart's action when under the influence of the poison: "Lorsque le cœur s'arrête, l'arrêt est précédé d'une période d'intermittence. Malgré l'arrêt du cœur, la fibre cardiaque reste excitable. En résumé, et c'est un fait d'une grande portée physiologique et médico-légale, un trace cardiographique présentant une *amplitude* environ *double des contractions cardiaques, précédé ou non d'une période de contractions irrégulières et plus nombreuses, suive d'un état de tétanisme vasculaire on d'intermittences* serait caractéristique d'un empoisonnement par l'aconitine." The matter contained in these quotations assuredly represents a quintessential extract of all our best knowledge of aconite in its physiological and clinical relations. And, accordingly, I place them last—as I regard them as the greatest—of my long drawn series of "selections."

With apologies to the reader for the protracted trial of his or her patience, I now close this summary of the leading facts known to me in connection with the physical, therapeutic, and toxicological history of the *mater et caput* of known poisons; the destructive properties of which have been occasionally—sometimes, it would appear, frequently—utilized from a period of unknown antiquity; and the modern (therapeutic, and strictly scientific) knowledge of which has been tardily developed in three stages, respectively initiated by: Matthiolus, of Rome; Störck, of Vienna; and Geoghegan, of Dublin.

34 York Street.

ON THE EFFECT OF QUININE AND UREA HYDROCHLORIDE UPON A CASE OF DOUBLE TERTIAN MALARIAL INFECTION,

*Contracted in Panama. Exhibition of Solis-Cohen's "Freedom Period."**

Reported from the Service of Professor Solomon Solis-Cohen.

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The case herewith presented illustrates certain points in the natural history of the malarial hæmamœba, and certain points in the therapy of malarial infection.

J. D., aged thirty, stoker on vessels plying on southern waters, was admitted, January 30, 1910, to the service of Professor S. Solis-Cohen, who kindly permits me to make this report.

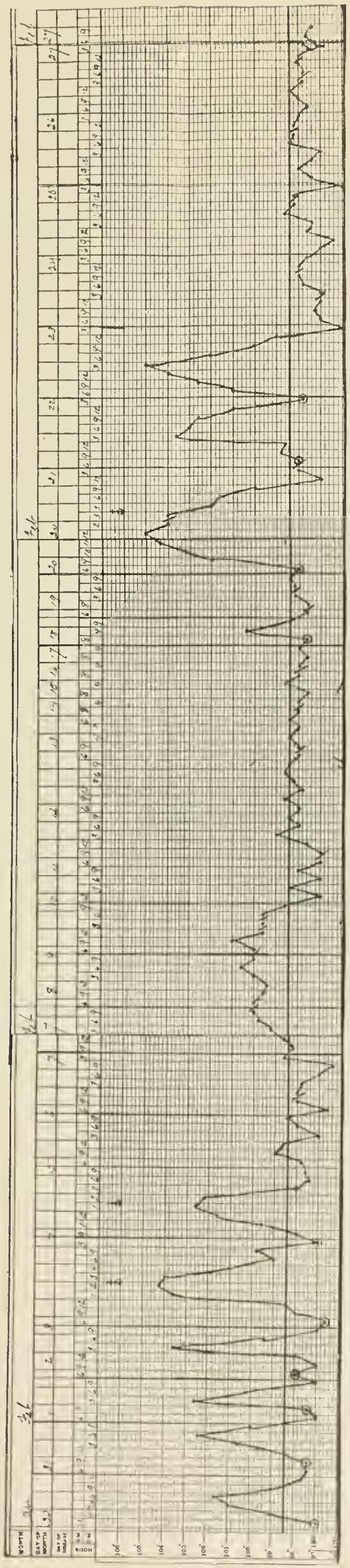
While in Colon, Central America, about a month earlier, he was conscious of acute muscular aching and a general feeling of malaise. A few days later he went to Santiago, Cuba, where he remained for a week. While in that city a sea captain gave him some quinine. Shortly after this he came to Philadelphia, arriving here on January 24th, and a few days later, about January 26th, he was seized with a chill.

Physical examination of the patient showed nothing significant other than a greatly enlarged spleen.

Shortly after his admission he became chilly and inside of one hour was suffering from a severe rigor. This was at 11 a. m. January 30th. In two hours his temperature had risen to 101.6° F. and by midnight had fallen to subnormal; the patient having had a profuse sweat. The patient's blood was examined, but no malarial parasites were found. At 12 noon on January 31st the patient had another severe chill, and on this occasion the temperature arose to 102.4° F. The blood was examined and no parasites were found. Inside of twelve hours the temperature had again fallen to subnormal. At 9 a. m. the next day (February 1st), a chill developed and the temperature arose rapidly to 103.6° F. and fell to subnormal in six hours. An examination of the blood failed to show the malarial parasite. At 6 a. m. on February 2d, the chill developed, the temperature rose to 103.6° F. and fell rapidly to subnormal. An examination of the blood on this date showed the malarial parasite in all stages.

We were now able to determine that we were dealing with a quotidian fever, with paroxysms recurring in alternate periods of twenty-one and twenty-four hours. The parasite was of the ordinary tertian type and the man was evidently infected with two broods, having a cycle of forty-five hours each; brood B being twenty-one hours later than brood A in arriving at maturity. This gave an anticipation of three hours in the chill time every third day. Thus brood A, causing chill at 12 noon Monday, brood B would cause chill at 9 a. m. Tuesday. At 9 a. m. Wednesday brood A completed its forty-five hour cycle causing chill; and the chill of brood B's forty-five hour cycle would be due according to calculation at 6 a. m. on Thursday.

Our patient's fifth chill occurred accordingly on February 3d at 6 a. m. In eight hours his temperature had reached its maximum of 104.2° F. and at this time he was given an injection of one gramme of quinine and urea hydrochloride. The malarial parasite was present on this date in large numbers. The following day, February 4th, his chill occurred on time. The maturing brood evidently having not been injured by the injection. His temperature rose, however, only to 102.4° F. and at this time he was given the second injection of quinine and urea hydrochloride. An examination of the blood showed the malarial parasite still present. The following day, February 5th, the second day after his first injection of quinine, he had no chill and the temperature rose only to 99° F. A few parasites were found upon this date. The sixth of February, two days after the second injection, no chill occurred and no parasites were found in the blood exam-



Temperature chart demonstrating double tertian malarial infection with freedom period of 329 hours after injection of quinine and urea hydrochloride. ⊙ chill begins; ‡ injection given.

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*Read at a meeting of the Clinical Society of Jefferson Hospital.

ined. It was now apparent that both broods had been killed, or at least largely inhibited, and it only remained to be seen how long he would remain free from paroxysms.

It has been shown by Dr. Cohen in a series of cases studied by him and brought before the profession, first in 1887, and more recently in a paper read before the American Society of Tropical Medicine in 1908,[1] that the period of freedom after the injection of quinine and urea hydrochloride is approximately six and one half or thirteen days, according to the peculiarity of the special parasite and the time at which the drug is used. The shortest period in some 250 cases was 147 hours, and the longest 325 hours. In this case the freedom period proved to be 329 hours and was interesting from the fact that this is the only Panama case Dr. Cohen has had the opportunity to study in this manner.

During this period of freedom from chills no parasites were demonstrable in the blood, but large quantities of free pigment were seen.

At 8 a. m. on February 18th, just 329 hours after the last paroxysm, the patient became chilly, his temperature rose to 100.4° F. and he had a slight sweat. This was not a typical paroxysm. An examination of the blood, however, showed the parasites present, although on the preceding day they could not be demonstrated, and had not been seen since February 5th. On the following day, February 19th, the patient had a typical paroxysm, just twenty-one hours having elapsed since the preceding abortive paroxysm. Examination of the blood showed parasites in large numbers. Upon the 20th the chill developed on time at 6 a. m. and the temperature rose to 105° F. Five hours later an injection of quinine and urea hydrochloride was given. The temperature fell rapidly to subnormal. Twenty-four hours later, February 21st at 6 a. m., the patient was in another paroxysm, his temperature rising to 103.6° F. No quinine was given on this occasion, as we were desirous of observing whether the quinine previously given had been administered early enough to destroy the spores set free during the previous paroxysm. It evidently had not, for twenty-one hours later, that is to say, on the following day, February 22d, at 3 a. m., the chill developed, the temperature rose to 105° F. and rapidly fell to subnormal. However, enough quinine remained in the circulation to kill the spores liberated on the 21st and also on the 22d, as no chill occurred on the 23d or on the 24th, although the blood still showed the malarial parasite in small numbers on both these days.

Similar experiences are recorded in Dr. Cohen's paper and also the fact that when the quinine is injected some hours before the expected paroxysm the same is usually missed, as is also the one upon the following day. A fact which was pointed out in the same paper, but which did not occur in this case, was that while the paroxysms, when tertian, would after the thirteenth day resume their former periodicity, on the other hand in many cases at first quotidian, they would after six and a half or thirteen days of freedom, change to tertian.

In this case the paroxysms resumed their former quotidian periodicity. No chill occurred on either the 25th or 26th of February, although the malarial parasite was demonstrable in diminishing numbers upon these dates. At 5 p. m. of February 25th the last injection of one gramme of quinine and urea hydrochloride was given. From that time it was given in the same dose by mouth night and morning. Upon February 27th no parasites were found after a search lasting one and a half hours.

This man was to have been treated from that time on according to the method used in Dr. Cohen's series of cases, which is to administer the salt in one gramme doses night and morning for two weeks after cessation of paroxysms, and then weekly in two doses of 0.6 gramme (10 grains) each, one on the evening of the sixth day and one on the morning of the seventh day, calculating from the date of the last paroxysm, and continuing this treatment for at least three months. The patient, however, failed to report back to the out patient department as advised.

The advantages of quinine and urea hydrochloride over other quinine salts are its solubility and its apparently higher efficacy. The objection brought against its use hypodermically is the frequent occurrence of a slough. We did not experience any difficulty along this line, having used the following technique:

All the instruments to be used are sterilized by boiling. The part into which the injection is to be made is cleansed with green soap and water; a high pressure syringe is used and after painting an area of some two inches in diameter with tincture of iodine, the long needle attached to the syringe is plunged deeply into the muscle. Care is taken to expel all the contents of the syringe so that in its withdrawal none of the solution will be dropped on the surrounding tissue. The puncture is then sealed with iodoform collodion.

It may be added that arsenic in the form of Fowler's solution was given in ascending doses during the time these studies were being made, and did not seem to exert any influence upon the course of the disease and very little upon the associated anemia.

The blood count upon admission was: Hæmoglobin, fifty-five per cent.; erythrocytes, 3,100,000; color index. 0.8; leucocytes, 5,200; polynuclears, forty-three per cent.; lymphocytes, thirty-three per cent.; hyaline, sixteen per cent.; eosinophiles, eight per cent.

On February 17th the blood count was: Hæmoglobin, fifty-eight per cent.; erythrocytes, 3,370,000; color index, 0.87; leucocytes, 8,600.

A differential count made in the period of freedom from parasites showed only four per cent. eosinophiles, while as shown above upon admission they were present to the extent of eight per cent.

On February 28th the blood count was: Hæmoglobin, forty-six per cent.; erythrocytes, 2,750,000; color index, 0.8; leucocytes, 7,600; polynuclears, fifty-eight per cent.; lymphocytes, forty per cent.; hyaline, two per cent.; eosinophiles, 0.

The similarity between this approximate fortnight of freedom after the injection of the quinine and the common incubation period, also the periods of cyst formation and sporozoite development in the sexual cycle of the parasite as observed in the mosquito, is extremely interesting. It may also be brought into relation with the old observation of clinicians concerning the tendency of malarial paroxysms, to recur either as chills and fever or with a masked symptomatology, such as neuralgia, headache, malaise, gastrointestinal disturbances, etc., on the seventh and fourteenth days.

As to the alternation of twenty-one and twenty-four hour intervals between paroxysms, many clinicians have observed this in other cases and as it seems unnecessary to assume infection by two mosquitoes at exactly twenty-one hours apart in a number of instances, it is fair to ask whether this does not represent a difference in the original maturity period of sporozoites injected at the same time.

For the laboratory studies I am deeply indebted to Dr. A. B. Landry.

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[1] *American Journal of the Medical Sciences*, September, 1908.

THE MODERN BROWN BREAD PILL.

By J. John Buzzell, M. D.,
Brooklyn.

We are a much cured people for we live in an age of polytherapy. Some wag has said that all "paths" lead to the grave—allopath, homœopath, humopath, osteopath, kinesipath, psychopath, and Kneipp's dew sprinkled path. And yet all that any professes to do is to make the path of life smoother and longer.

Intimate personal knowledge of the practices of hundreds of physicians both in the great metropolitan centres and in the country towns, has revealed to the writer many facts contrary to the commonly accepted ideas of the use of drugs in effecting cures. We find that not the least in importance is the "placebo."

In all the many discussions and writings on the various methods of healing diseases, the placebo, as a placebo, seems to have failed to receive its just share of credit for wonders worked. It plays a very important part everywhere among successful physicians and its field of usefulness is wide as will be seen.

A placebo, as its name would signify, is any more or less inert preparation given to please or satisfy the whims of a patient. The "blank" tablet, usually made from sugar of milk, is a common form of placebo. In appearance it is like many another pill or tablet containing potent and efficacious drugs and is prepared in various forms and flavored, colored, or coated as may be desired. It is often in liquid form as well. A few generations ago the old family physician rolled a little pill of brown bread, perhaps flavored it, and gave it with explicit directions and wonderful results to some patient whose complaints were largely illusory or in whom the conditions were magnified by a highly sensitive imagination.

The placebo has been gradually transformed from the crude brown bread pill to a tablet of the strictest "up to dateness," elaborate in flavor and appearance to suit finical patients.

The placebo has had no temples and no altars built for its worship. No international congresses have met in its honor. No cities have been built and named after it. No long whiskered, self constituted prophets have proclaimed its wonders. No one has had visions or revelations concerning it, and yet it is a fact that as marvelous cures have been accomplished through its means as through any of the much heralded and widely differing cults.

The greatest usefulness of the placebo is not in cases of purely imaginary diseases, of which there are comparatively few, but in those cases in which the patient believes his trouble is due to something other or more serious than the real cause. This condition probably obtains in far the greater number of cases, and a full statement to the patient would often result in absolute discredit of the physician's diagnosis, as in almost every instance the patient has made his own diagnosis beforehand.

Most people who are distressed on account of impaired physical functions require for their relief nothing more than a simple remedy combined with information and advice that is practical. The human race is as yet unemancipated from fear of death, and in illness this fear is intensified and there must be some method of inspiring hope and courage in order to overcome that mental depression which would follow as surely as darkness follows daylight.

It has been said that neurasthenic patients are cured not by physic but by the physician. To attempt to reinvigorate the jaded system with stimulating drugs would be like putting a lighted candle under the bulb of a thermometer.

What consumes time in acquiring necessarily requires time to dispose of; what indulgence causes self denial must eliminate. Natural strength cannot be substituted by artificial strength produced by stimulation. Yet patients often look for miracles to be worked along this line. Here the placebo does the work of keeping up the patient's courage and keeps him in touch with his adviser, while in reality obedience to the laws of hygiene, rest, change of scene or climate, and the improvement of nutrition by social and moral measures gives the natural recuperative powers a chance to do the work of repair, augmented and expedited by the mental effect of the placebo.

Chomel said: "A person digests as much with his legs as with his stomach," and methods more in keeping with this idea have been generally adopted. We hear of the mental factor in medicine spoken of as something comparatively new, yet the curative value of mental control was long ago recognized and has ever been more successfully demonstrated by physicians than by the dealers in any of the many cults solely devoted to that sort of treatment. Any treatment, however absurd, that sufficiently affects the mind to restore self confidence is beneficial, for the mental and physical are so intimately entwined and blended that disturbance of one profoundly affects the other. People are forever mistaking the effect for the cause, for nervous symptoms may be primary or secondary and the mental is more often the accompanying condition rather than an ætiological factor.

Each pathological condition has, to the trained eye of the expert diagnostitian, its own psychological sign of expression—accurate, definite, and unique, which hope and confidence never fail to modify. Pain is the reaction of the mind against certain vibrations communicated from some part of the body to the brain by means of the nerves. Therefore, to fortify the mind with courage and hope hastens the repair of the pathological condition by increasing the general vital resistive force. If in the cases of purely imaginary diseases there is faith in medicine then the placebo again finds its usefulness and effects its cure. Religion, always a principle of energy, may be of great usefulness here if its application is without the extreme fanaticism which always leads to destructive measures.

After some painful condition which the patient fears will return, the placebo is of great value in releasing the mind from this fear of suffering. In some forms of insomnia hypnotics are often replaced by placebos, with good results, after the fact of the hypnotic has been established in the patient's mind.

Many people fail to call a physician until, from lack of prompt attention, complications have arisen which make the diagnosis difficult and something must be given to keep the patient pacified till some of the many scientific methods, such as the microscopical examination, the test tube, and the culture media, may be resorted to.

Sometimes baby is ill and a simple remedy administered in one or two doses may be all that is required. But there is a worrying mother or aunt to be treated and the poor, innocent infant has to swallow the placebo. So long as it is nothing but sugar of milk it will do no harm and the effect on the "fidgety" party is magical. Many physicians can testify that they have known children that have been actually loved to death. "Care will kill a cat," and yet there is no living without it. Overanxiety on the part of the mother may cause her to house the child too closely or to handle it to its detriment. To see the very small children on the east side of New York running uncared for in the streets is to wonder why more of them are not run down and killed by teams and cars. Did you ever stop to think that their very lives depend on their outdoor living? The number so killed is insignificant compared with what the death rate would be were they confined in the miserable quarters which are their homes. Many people actually kill themselves trying to save their lives. Advice given in good faith by a partially wise fanatic often produces the same result.

"A disease known is half cured" is a truthful old saying, and who is better able to recognize a condition of disease and advise a means for relief, whether it be medicine or mind, than the physician whose special training in psychology, pathology, physiology, and the laws of hygiene has given him unsurpassed understanding of human nature and the mental processes in their relation to the physical?

One of the most vital facts in the practice of medicine is human nature, and no one should understand it better than the physician. There has ever been a desire to eliminate the physician, to deracinate medical science, and discover some miraculous method—like the spring of perpetual youth—whereby any and all disease could be cured in one grand plunge; a sort of medicoreligious cyclone cellar where neither disease nor death could enter. Prayer, faith, music, mysticism, relics, images, masks, and a multitude of other things have all been tried and proved too fallable to endure. Faith without works won't work.

To show how superstition has ever hovered about illness and the curing of disease, the ℞ always placed before a prescription, although it has come to have a definite meaning now, is reputed to have been originally the same as the symbol of Jupiter that was placed at the top of a formula to propitiate the king of the gods.

Why does the little pink placebo cure—there is abundant evidence that it does cure—if cures are dependent on any particular creed or cult? We cannot deny its existence. It is pink and it is palatable, therefore it is material. Enough of them would sweeten a cup of tea! The belief that in the medicine lies relief produces the desired results.

The frenzying methods pursued in the business and social life of the past few generations have produced a neuropathic race peculiarly susceptible to the wiles of all the new "sciences," cults, and "movements." They espouse these rashly unscientific and insufficient healing cults with crass credulity. The woods are literally full of these hope dealing healers, but, like the Blind Men of Hindustan, "each is partly in the right and all are in the wrong."

Some individual, never before heard of either in the ranks of science or religion, finds out a small truth that wise men have known and employed in its proper way for years, considers it of such transcendent importance that he at once establishes himself as a philosopher and puts forth the doctrine of his little thought germ. He discredits all that the greatest minds have worked out since the time of Hippocrates, and then complains bitterly against the antagonism his theory meets at the hands of recognized authorities. O the pathos of pathies! A great truth does not enter the world; it is always in the world. Truth does not blaze to the eyes of any individual silently surveying the broad expanse of human experience. Truth comes in broken lights. Inventors and promoters are surely useful to the slower and cautious multitude as they explore new routes that the marching caravan behind may travel or avoid. The greatest error any new science can make is to despise the opinions and practices of the old schools. Yet the very lives of some of these new healing cults—yes their births—depend on completely overthrowing the old. But time invariably proves that although the new may have been an advance in some directions, in others it was a loss, and what in the end is acknowledged to be the truth in its entirety is found to be an amalgamation of many minor truths which at their conception seemed so important that all else was lost sight of and conservative facts disregarded. It is notable that while there have been many changes in theories of cause and methods of treatment of diseases, the fundamental principles of medical science have remained unchanged, and the fact of the value and efficacy of the placebo has constantly gained ground. Fewer drugs are being employed in view of the better understanding of their specific use and the remedial effect of air, exercise, diet, and surroundings. In one of our large hospitals, according to some figures recently published, there has been a decrease of over one third in the quantity of drugs used in the past ten years. The official presenting these statistics attributes it to the general tendency to use fewer drugs and those more scientifically.

The United States government has adopted a standard code of remedial agents, detailed the method of preparation, and provided for its revision every ten years by the most expert authority obtainable. This is the standard followed by all physicians and chemists.

Physicians have with unremitting perseverance striven to educate the public in measures to prevent and eliminate disease and raise civilization to a higher standard, rather than merely to make capital of the misfortunes of others. As a result some of our most dreaded and most fatal diseases have become almost unknown and others are found only in mild and curable forms. Probably no profession or calling has been more persistent and resultful in its efforts to raise the standard of civilization than that of the physician. His efforts fail of appreciation chiefly through ignorance, for dissatisfaction with medicine comes principally from people who expect it to do what it was never intended to do.

Many people think that the surgeon is overcome by an irresistible desire to cut up people, to "see the wheels go 'round," to take them apart to see why they do not tick right. Nothing could be farther from the truth. The attendant conditions of almost any surgical operation subject the operator to the danger of septic infection unless he proceeds with extreme caution. The slightest error might be as dangerous to the surgeon as to the patient.

The first impulse when one sees a drowning man is to save him at any risk. The first impulse of the physician or surgeon is to save the patient. Devotion to duty has cost many a physician his life. All walks of life have their black sheep, but that physicians are as conscientious as any other class cannot be denied. His life is not one of ease or luxury. That so few ever become wealthy is due, partly to the fact that they do not apply the same rules to their business transactions that business men do, and partly to the fact that the general practitioner does not charge a fee as large compared with time and service rendered as most trained men in other lines.

The struggle of the ages has been the emancipation of truth from fanaticism. The physician who has his own and humanity's eventual best interest at heart cannot fail to put the broadest construction upon any practice of proven value in alleviating human misery, for unless he takes this generous view of things his pursuit of knowledge is pitiful in the extreme. Had believers in mental cures the same confidence in physicians and medicines that they have in their loudly proclaimed cults they would not fail to find the same relief in every case. The number of people brought from serious physical and mental conditions to good health by advice and medicine at the hands of physicians is overwhelmingly great compared with those of all the mental cures put together. Cures by medicine are taken as a matter of course and the cures accomplished by placebos are never known to be such by the cured and thus the wonderful results are never proclaimed from the housetops. The facts would prove that the cures by placebos in the hands of physicians outnumber ten to one the accumulated results of all the mental healing cults combined.

If we obey the laws of Nature in eating, sleeping, working, and thinking; put our faith in truly scientific principles and do not strike sail to fear, as Pat O'Blarney's toast has it "we will live all the days of our lives."

POSTOPERATIVE COMPLICATIONS IN A CASE OF ACUTE SECONDARY GLAUCOMA, A CASE OF MATURE SENILE CATARACT, AND A CASE OF SUDDEN DEATH WHILE PERFORMING IRIDECTOMY FOR ACUTE GLAUCOMA.*

By D. Forest Harbridge, M. D.,
Philadelphia.

The following notes are taken from the clinical records of three rather unusual cases; each one recorded represents complications which the writer has never encountered before, and may be taken as fairly illustrative of some of the difficulties that occasionally follow operations upon the eyeball.

Case I. B. D.: age, sixty; male; laborer; first seen February 3, 1909. Three months previous to his visit to the Chester Hospital, patient was struck by a piece of wood, near the right eye, but at the time, he did not think the eye injured. Four or five weeks later, however, he observed that he was able to see, to read, with the eye, without the use of glasses, but could not see distinctly at a distance. Ten days ago the patient was examined at the University Hospital, at which time glasses were ordered; four days later, he suffered with severe pain in the right eye, radiating up over the frontal region, marked parietal headache, nausea, and loss of sleep. At the time of the patient's first visit he was on a protracted debauch. The eye showed all the signs of acute glaucoma. Vision= fingers at twelve inches. Eye ball almost stony hard. The anterior chamber very shallow, and the lens appeared greatly swollen. The patient was placed in bed, purged, an eserine solution instilled, and a few hours later a broad iridectomy was performed under cocaine anæthesia. The wound did not heal kindly, and at the end of one week, T=+2? The anterior chamber was almost obliterated, the lens greatly swollen, but no apparent evidence of the lens capsule having been injured during the operation.

On February 11th, eight days after the iridectomy, the removal of the lens was decided upon. Following the delivery of the lens, vitreous presenting, the wound was immediately closed, and a compressed bandage applied. The eye was inspected at intervals, but the edges of the wound did not approximate, and the vitreous prolapse gradually increased, until by the eighth day the corneal flap had attained a position horizontal to the normal, that is the cut edge was directed anteriorly assuming a position at right angle to the plane of the balance of the cornea, the open space thus formed being occupied by a large plug of vitreous. Two sutures were passed through the conjunctiva and sclera on the one side and the edge of the corneal flap on the other, the edges of the wound were drawn together and approximated, the vitreous prolapse being snipped off. The stitches were removed at the end of six days and after a very protracted convalescence, during which time it was necessary to stimulate the edges of the wound several times with silver nitrate, healing finally took place, leaving a broad cicatrix; in which either angle of the iris was incarcerated, the pupillary space being drawn slightly up. No infection took place at any time, and vision with + S8 = +Cy. 2.50×30=6/15 pt.

The patient was last seen February 26, 1910, one year after the operation. The pupillary space was drawn up and out, it being almost obliterated, but by elevating the lid a good light feel was obtained T=—1.

Case II. Colored; coachman; age, sixty-nine; first seen February 9, 1910, in my department of the Chester Hospital, suffering with a recurrent attack of acute glaucoma of the right eye. The eye was blind, apparently due to an attack of the same trouble three years previous. The patient was put to bed, bowels emptied, acetylsalicylic acid for pain, and an eserine solution instilled into the eye. After having been treated in this manner for forty-eight hours, without any amelioration of symptoms, an iridectomy was decided upon. The patient was well nourished for a man of his years, rather ridged radials, pulse 80; urine negative; exact data regarding his heart lacking, save to say that he showed no gross evidence of cardiac disturbance. The patient was prepared for operation, and certainly to all outward appearances was perfectly quiet and calm, showing no fear whatsoever. Cocaine anæsthesia was used, five drops of a four per cent. solution, being instilled twice at an interval of about two minutes. Upon doing the iridectomy, the patient was cautioned regarding the possibility of a moderate amount of pain, at the time of cutting the iris, and after having completed this part of the operation, inquiry regarding this point, brought forth a negative response, he was then asked to look down, which he promptly did, and while my hand was held out to receive a spatula from my assistant, at that instant he drew up his legs part way, took four or five shallow breaths, and was dead. There was positively no warning whatsoever of impending danger. The patient's heart was immediately examined, but no sounds were heard, restoratives were promptly resorted to, but of no avail. From the time he was conscious, evidenced by his prompt response to my request to look down, until his death ensued, scarcely thirty seconds elapsed. Unfortunately no autopsy was granted. This is simply a statement of facts. I have no opinion to offer, save only to say, that I believe the operation and sudden death were purely a coincidence. A suppressed excitement due to the operation may have been a factor, but he certainly was about the "coolest excitable" patient I have ever operated upon.

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*Read before the March meeting of the Wills Hospital Ophthalmic Society, Philadelphia.

CASE III. D. M.; male; age, seventy-nine; an active energetic person with every evidence of general arteriosclerosis, first seen about four years ago. On September 6, 1909, he was operated upon for senile cataract, in the right eye, a preliminary iridectomy having been performed a few weeks previous. Following the corneoscleral incision, there was an undue hæmorrhage into the anterior chamber, which greatly interfered with the proper view of the field of operation. This, however, cleared up during convalescence.

Five days after the operation he suffered a slight paralysis of the left arm, evidenced by a sense of numbness, tingling, moderately restricted movement of the arm, and a slight sense of dizziness; this all disappeared in the course of a week or ten days. The patient was discharged from the hospital at the end of two weeks, his general nervous system being greatly shattered by the shock of the operation. A few days after his return home, the right angle of his mouth drooped, allowing the saliva to flow out, he was unable to articulate properly, facial expression was only moderately affected, the eyelids were not involved. In the course of two or three months, this all cleared up, with a marked improvement in his general health. Seven weeks after the operation +3.50= + Cy 6.50×30= V6/15 (1 letter). Six weeks ago, or about four months after the operation, the patient's vision noticeably lessened. His correction had changed to +S8= +Cy 1.50×30=V6/60 and in the macular region were observed several small faint fresh hæmorrhages. The case, of course, represents an interesting series of events, directly due to a general arteriosclerosis The question, however, that confronts me is—am I justified in attempting to operate upon the fellow eye, which the patient is anticipating in the near future?

256 SOUTH FIFTEENTH STREET.

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Tuberculosis among Prisoners.—The National Association for the Study and Prevention of Tuberculosis has lately published a report which shows that there are 12,000 tuberculous prisoners in the State, federal, and local prisons and jails of the United States with less than twenty-five institutions and hardly 800 beds for their treatment. From several investigations that have been made it is estimated that on an average about fifteen per cent. of the prison population of the country is afflicted with tuberculosis. On this basis, out of the 80,000 prisoners housed in the penal institutions of continental United States at any given time, not less than 12,000 are infected with this disease. If the Philippine Islands and other insular possessions were taken into consideration, the number would be much larger. Only twenty-one prisons in fifteen States and territories have provided special places for the treatment of their tuberculous prisoners.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CII.—How do you treat other electric shocks than that of lightning? (Closed September 15, 1910.)

CIII.—When can a pulmonary tuberculosis patient be discharged as cured? (Answers due not later than October 15, 1910.)

CIV.—How do you perform vaccination? (Answers due not later than November 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question CI was awarded to Dr. William Brady, of Elmira, N. Y., whose article appeared on page 626.

PRIZE QUESTION CI.

THE TREATMENT OF CHRONIC NASAL CATARRH.

(Concluded from page 629.)

Dr. A. L. Fuller, of Garden City, Texas, states:

Chronic nasal catarrh is a term used to designate the following conditions: 1. Simple chronic rhinitis; 2, intumescent rhinitis; 3, hypertrophic rhinitis; 4, atrophic rhinitis; the first three of which are different manifestations or stages of the same pathological process, and frequently coexist in the same patient; attacks of the intumescent form occurring in the course of a simple chronic rhinitis, while the hypertrophic form is a later stage of the process, being due to organization with fibrous tissue of the subepithelial inflammatory deposits. Atrophic rhinitis may be a later stage of the same process, due to contraction of the fibrous elements, found in previous stages, and consequent diminution of the blood supply to the secreting structure, or may be either a primary atrophy or one due to other constitutional diseases.

Since, therefore, a simple chronic rhinitis is frequently complicated by attacks of the intumescent form, and in hypertrophic rhinitis the areas of mucous membrane between the hypertrophies are in a state of simple inflammation, I shall discuss the treatment of these three forms together, leaving the treatment of atrophic rhinitis, which is so radically different in its principles, to be discussed by itself.

The treatment of these conditions is local and constitutional. The first condition requisite for the successful treatment of chronic rhinitis is the removal of any defect of the general system, which in any way affects the circulation or secretion. It is impossible to enumerate all such conditions in a short paper, but some of the more important are an impoverished condition of the blood, weak action of the heart, and loss of tone of the bloodvessels, errors of the digestive system due to deficient hepatic or intestinal secretions, and the uric acid diathesis. Any such defects should be overcome as far as possible by appropriate treatment. In all cases, as a preliminary, the patient's bowels should be well opened, and then secretions kept up by some gentle stimulant, of which sodium phosphate, in teaspoonful doses night and morning, is in my opinion one of the best. Some tonic to the vascular system should be given, and one of the best is a combination of strychnine with one of the mineral acids, such as strychnine sulphate, 1/30 grain; and dilute nitrohydrochloric acid, 20 drops; three times daily after meals. This combination tends to equalize the circulation, not only by its direct action on the muscular tissue, but by its action in promoting hepatic secretion and improving the digestion.

Any peculiar susceptibility of the patient to colds should be combated by proper clothing and avoidance of undue exposure. One of the best means of fortifying the patient against colds is the daily cool bath, which should not, however, be cold enough to cause depression or failure to react, and should be followed by a brisk rub down with a rough towel. This not only improves the functions of the skin but tones up the whole vascular system.

All local exciting factors, such as dust, chemical irritants, etc., should be avoided, or the patients removed from their influence. In my opinion, one of the most common of all causes of chronic nasal catarrh, certainly the most common of all local causes, is the overheated, badly ventilated rooms full of air deficient in moisture, so common where a closed stove is used in place of an open fireplace; the dryness of the air caused by these stoves calling for an increased supply of moisture from the nasal mucous membrane to the inspired air, and so setting up or increasing congestion of the mucous membrane. This should be overcome by the use of open fireplaces in all living rooms; or, if this is impossible, by the addition of moisture to the air by placing a vessel of boiling water on the stove, which will add some moisture, and thorough ventilation.

It is absolutely essential to a cure of chronic nasal catarrh that these defects of the general system and surroundings are corrected, otherwise any local treatment will be of little avail in effecting permanent relief.

The local treatment of these conditions consists, first, of the thorough cleansing, second, of the application of sedative, astringent, alterative, and protective remedies to the inflamed mucous membrane, and, third, of the removal of any obstructions, such as spurs, hypertrophies, polyps, etc.

The cleansing may be accomplished by the use of some mildly antiseptic alkaline solution. The following formula, which is a modification of the well known Dobell's solution, is a favorite with me, as being cleansing, soothing, and antiseptic, while many of the more elegant formulas in use, in which other antiseptics have been incorporated in place of the carbolic acid, are more or less irritating:

℞ Sodium bicarbonate, ...ʒi;
Sodium biborate, ...ʒi;
Carbolic acid, ...ʒj;
Glycerin, ...℥i;
Water, ...ad Oii.
M.

This should be used warm, and may be used at home by the patient two or three times daily by means of an atomizer. Every other day the patient should be treated by the physician at his office. This treatment will consist of thorough cleansing by my solution, after which some stimulating or mildly astringent application should be made to the diseased areas of the mucous membrane. Some of the milder of these applications are ichthyol of a strength of twenty per cent., gradually increased, tannic acid in glycerin, from twenty per cent. to forty per cent., while in the more severe cases a five per cent. solution of silver nitrate may be used. These applications should be made by a cotton tipped probe, after which the surface should be dried to remove any excess and some oily soothing, and protective application made by the nebulizer. One of the most useful of these, and one which I most frequently use, is the following :

℞ Menthol, ...gr. vj;
Camphor, ...gr. xx;
Liquid petrolatum, ...q. s. ℥iii.
M.

If the case is one of simple chronic rhinitis, without any obstructions such as spurs, hypertrophies, or any excessive swelling of the mucous membrane, this will be all that is required in the way of local treatment, and, if steadily persisted in for some weeks, will result in great amelioration of the condition, and possibly a complete cure. If, however, any obstruction exists, it must be removed before any great improvement can be expected. Septal spurs should be removed by the saw, and polyps by the wire snare, after which their pedicles or bases should be cauterized to prevent recurrence. If there is any excessive swelling over the turbinates, which has not become organized but consists only of inflammatory infiltration, and can hardly therefore be properly termed a hypertrophy, one of the best methods of treatment is linear scarification, one or two linear incisions being made through the length of the affected area down to the bone. This will relieve congestion and by the formation of some cicatricial tissue cause contraction of the mucous membrane over the area treated. If there are hypertrophies the treatment consists in the removal of the excess of tissue, the methods varying with the location of the hypertrophy. Anterior hypertrophies may be reduced by the galvanocautery, chemical caustics, or excision. If the galvanocautery is chosen, the wire knife is heated to a dull red heat and applied to the hypertrophy in its most prominent part, an incision being made to the bone. A superficial burn will give some relief, but its results are by no means lasting. This cautery incision to the bone will produce a slough, which will separate in a few days leaving an open wound to heal, the resulting cicatrix causing considerable diminution in the size of the hypertrophy, and improvement in respiration. It may be necessary to repeat this operation a second or third time, applying the cautery knife to a different area of the hypertrophy each time, in order to obtain complete reduction of the enlargement; but such repetition is better than attempting to do too much at one sitting, as too extensive an application may produce such destruction of mucous membrane, as to leave the nose in a condition approximating atrophic catarrh. The same diminution of hypertrophies may be obtained, though with less certainty and with decidedly less accuracy by the use of chemical caustics. Of these chromic acid is the one most frequently used, a crystal being fused on the end of a probe, which is then applied to the hypertrophy, one or two linear burns being made. This will produce a cicatrix which will contract and produce the same effect as that caused by the galvanocautery. Both before and after applying the chromic acid the mucous membrane must be thoroughly dried, as otherwise the caustic will spread and cause a larger burn than is intended. In using either the galvanocautery or chemical caustics great care must be taken not to come into contact with the septum, as otherwise a burn will be produced and there will be great risk of adhesions between the turbinate and the septum, which, if not prevented, will leave the patient in a worse condition than he was at first. For this reason, and because I believe it to be a more accurate method of procedure, my own preference is the use of the knife as recommended by Kyle, two incisions down to the bone being made through the length of the hypertrophy, the incisions meeting in their whole length at their deepest parts, thus forming a V shaped strip, with its apex at the bottom of the wound, which can be removed with scissors, if not freed by the knife. This method has the advantage that there is absolutely no possibility, except in the most clumsy hands, of wounding the septum and causing synechiæ. The surfaces of the wound made in this way come together and heal more rapidly than wounds made by the galvanocautery or chemicals, besides leaving less nonsecreting cicatricial tissue. I have used this method for some time past with satisfaction to both myself and patients and prefer it to either of the other methods. It is rarely necessary to remove part of the anterior end of the turbinate bone solely for the nasal condition, though such procedure may be needed in obstructive troubles of the lacrymal apparatus. It is of course understood that the parts are thoroughly anæsthetized with cocaine before either of these operations is carried out. The after treatment of all consists of a loose packing for a few hours, then thorough cleansing till the wound is healed, followed by treatment as for simple rhinitis.

Posterior hypertrophies are best removed by the cold wire snare. The snare is passed through the nostril into the pharynx and the loop protruded, the wire having been bent to one side before insertion, so as to engage the hypertrophy when protruded and withdrawn. The growth having been engaged in the loop, the wire is slowly withdrawn till its pedicle or base is encircled. The wire is then gradually tightened by means of the screw until the hypertrophy is removed. This must be done very slowly in order to avoid any excessive hæmorrhage, which might be hard to control. The patient should remain very quiet and refrain from violently blowing his nose for several hours, in order to avoid starting a hæmorrhage, after which the treatment consists of thorough cleansing of the nasal cavity and postnasal space, with such other treatment as may be needed for the remaining inflammation of the nasal cavity. Cocaine is not as useful as some other local anæsthetics for posterior hypertrophies, as the contraction of the tissues caused by it renders the growth more difficult to engage in the snare, stovaine being preferable.

To sum up: In treating these cases, the first thing is to bring the mucous membrane into as good condition as possible, by thorough cleansing and the use of alterative, astringent, and soothing preparations, as in simple rhinitis. This having been accomplished, the renewal of any obstructions, whether they are causative such as spurs, etc., or whether they are results, as hypertrophies, must be undertaken. After the removal of these obstructions there still remains a simple rhinitis which should be treated as outlined. A steady adherence to treatment along these lines will, in most cases, result in great improvement, such as will be satisfactory to the patient; though it is doubtful whether a permanent cure, in the true sense of the word, is often attained; for while the existing condition is relieved, the underlying systemic condition and surroundings of the patient will most likely cause a recurrence or fresh onset of the nasal condition in the course of time. At no time must the general condition of the patient be overlooked, for it is hopeless to attempt a cure of chronic nasal catarrh by local treatment alone.

The treatment of chronic atrophic rhinitis, which is very unsatisfactory, is in many respects the opposite of the treatment of the other three forms of chronic rhinitis; for in these we have to do with a swelling which we try to reduce, whereas in the latter we have to do with a shrinkage, which leaves the cavity too large and which we try to overcome. The treatment of this form is directed chiefly to removal of its distressing symptoms, such as odor, crust formation, and dryness, and an endeavor to reestablish secretion. To this end, constitutional treatment should be directed to the overcoming of all errors of the system, and the treatment of the dyscrasias, such as syphilis. The local treatment consists of thorough cleansing, accompanied by such applications as will prevent the formation of crusts, remove the odor, and, if possible, produce renewed secretory activity of such parts of the mucous membrane as are not entirely atrophied. The cleansing may be accomplished by having the patient use an alkaline solution, such as is used in other forms of rhinitis, three or four times daily at home. This should be used as warm as can comfortably be borne. After using this a few drops of coal oil should be placed in each nostril. This cleansing treatment should also be carried out by the physician not less than three times weekly. If crusts are difficult to remove, they may be removed by the use of hydrogen peroxide, which may be applied by a pledget of cotton twisted on the end of a probe, after which the nasal cavities should be again washed out and coal oil applied to every part by swabbing. The postnasal space should also be thoroughly cleansed by the use of an atomizer with suitable tip or a special postnasal syringe, the warm alkaline solution being used till it runs freely from the nostrils. This treatment, if faithfully carried out, will in most cases relieve the patient of the annoying odor and prevents the crust formation. It is not to be expected that any great restoration of function of the mucous membrane can be obtained, but some attempt to produce secretion may be made. For this stimulating powders may be insufflated, such as a mixture of stearate of zinc and silver nitrate, the proportion of the latter being small at first and gradually increased. Massage of the mucous membrane by a cotton wrapped probe may also be useful for this end. One of the best means I have found for producing some flow of moisture, and relieving the excessive dryness which often exists, is the insertion of pledgets of cotton, or better still, lambs' wool saturated with glycerin, into the cavity. These should be allowed to remain for some hours and will often relieve the dryness when all other remedies fail. If the mucous membrane is infected and a purulent discharge present, the use of an astringent is indicated, such as a three per cent. solution of zinc chloride or a weak solution of silver nitrate. All irregularities of the nasal cavities should be remedied, and if any infection of the accessory cavities exists it should receive appropriate treatment.

By these means and careful regulation of the general health, much may be done to relieve the patient of the disturbing symptoms, but a cure of chronic atrophic rhinitis is not to be expected.

In conclusion, any accompanying condition of the nasopharynx, such as the pharyngitis which always exists in connection with chronic atrophic rhinitis, and oftentimes in connection with the other forms of chronic rhinitis, either from extension of the process or from mouth breathing, should receive proper treatment. I have not discussed this in this paper, which, as its title implies, is devoted solely to the affections of the anterior nasal cavities, classed as chronic nasal catarrh.

Dr. Nathan Settel, of New York, observes:

Before deciding upon the most favorable method to pursue in treating chronic catarrhal affections of the nasal tract, a careful and thorough examination of both nostrils and nasopharynx, before and after cocainization, is absolutely essential. The following points should receive special attention: 1. The degree of hypertrophy of the mucous membrane and the region of the nostrils where it is most evident. In the majority of instances, the inferior turbinal bodies show the most marked hypertrophic changes. 2. The presence of any other nasal defect (septal deflections or spurs). Septal abnormities must be corrected at the outset, as they predispose to and aggravate the changes in an existing nasal catarrh.

In the early stages of chronic rhinitis where the tissue changes are not very marked, active surgical treatment should be avoided. Here palliative measures usually suffice to relieve the distressing symptoms of nasal obstruction and profuse discharge. Alkaline and antiseptic sprays afford relief, and their usage should be encouraged prior to attempting more radical methods.

If these preliminary measures fail to relieve the nasal stenosis, the following are to be recommended: 1. Cauterization (electrical or chemical); 2. operative treatment (the removal of the excessively hypertrophied turbinal tissue).

Electrocauterization.—This method is practised much less at present than formerly, as it is often followed by excessive tissue destruction. Its technique follows: Induce local anæsthesia by using a ten per cent. cocaine solution. A cotton wound applicator dipped in this solution may either be rubbed against the surface of the turbinate, or a thin pledget of cotton saturated with the drug may be allowed to remain in contact with the mucous membrane of the turbinate for a period of ten minutes. Now make sure the surface is insensitive to pain by testing with the probe, being careful not to cause any bleeding in so doing. Dry the surface and introduce the cold galvanocautery electrode against the turbinate. Turn on the current, and make a horizontal linear cauterization. Care should be exercised not to cauterize too large a surface or too deeply at one sitting. The same details of procedure may be repeated at intervals of a week, until the redundant tissue has shrunken sufficiently to afford permanent relief to the patient.

Chemical cauterization.—For this purpose either the trichloracetic acid or chronic acid may be employed. Both in my dispensary service and private practice, I have obtained better results after the use of the former. Method of cauterization: Cocainize as for electrical cauterization, and test anæsthesia of surface with a probe. Melt some trichloracetic acid crystals upon the end of an applicator, allow this to cool in the air, and the recrystallized form will remain adherent to the applicator. Introduce this into the nostril along the turbinal body, and proceed, as with the galvanocautery, in a horizontal direction, avoiding contact with the septal mucous membrane. If chromic acid crystals are employed for this purpose, they may be melted upon the tip of an applicator so as to form a rounded head, which should be used exactly as the trichloracetic acid.

If chemical cauterization is resorted to, the hypertrophied turbinal tissue may contract sufficiently to relieve the symptoms complained of, but frequently, on account of the destruction of the epithelial surface and excessive scar production, an atrophic form of rhinitis with its accompanying disagreeable symptoms may be brought about.

Surgical treatment: If the hypertrophy of the middle or inferior turbinates is great enough to produce a permanent obstruction from which the patient seldom experiences any relief, then operative methods are indicated. These consist of removing the excessive growth either with the nasal scissors and forceps, or preferably, with the cold wire snare.

Technique: Cocainize thoroughly with a ten per cent. solution. With the scissors detach the hypertrophied portion, grasp it with a pair of nasal forceps, and remove it. The objection to this method is that it is apt to be followed by a brisk hæmorrhage. The snare is therefore the instrument to be preferred. Technique: Having threaded it properly, the loop of the snare is made somewhat larger than the estimated size of the growth to be included. Dilate the nostril well, and introduce the loop carefully so as to embrace the hypertrophied tissue. Firm pressure is then made in an outward direction, and the snare is closed slowly. The excised portion may then be removed with a pair of forceps.

Hæmorrhage and sepsis are complications that make asepsis and careful technique just as important in this as in any major surgical operation. If bleeding is profuse during or after the operation, it may be controlled by inserting into the nostril a cotton plug dipped in a solution of adrenalin chloride, 1 to 2000, or by instructing the patient to insufflate some bismuth powder. The patient must remain very quiet after the operation, as the excessive heart beating incident upon muscular exercise may increase the hæmorrhage. Packing or tamponing the nose should only be resorted to when the bleeding is very marked, but no dressings should be kept in the nose for more than twenty-four or thirty-six hours. In this way the nasal passages are kept free, drainage is maintained, and infection is avoided. The treatment to follow any of the previously described methods, should consist in syringing (without force) or spraying the nostrils, so as to keep the surface free from the accumulating blood clots and secretions.

The treatment of the atrophic form of chronic rhinitis is not as successful as that of the hypertrophic variety. In atrophic rhinitis, we must 1, remove the cause if it can be ascertained; 2, correct any coexisting nasal defects; and 3, relieve the patient of the distressing symptoms. Alkaline and antiseptic nasal irrigations containing some sodium bicarbonate, sodium chloride and borax, employed in large quantities and at frequent intervals, have been found to be most grateful to the patient.

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Correspondence.

LETTER FROM LONDON.

The Approaching Opening of the Medical Schools.—Drug Habits.—The Practice of Medicine as a Means of Earning a Living.

London, *September 13, 1910.*

Preparations are now being made at the hospital medical schools for the opening of the winter session, which, as is customary, will take place at all the leading hospitals during the first week of October. But the schools really have to be opened sooner than the hospitals, owing to the entrance scholarship examinations, which are always held a week or two before the actual beginning of the new session. Through the institution of these scholarships it is possible for at least eleven students in London to have the whole of their fees for the five years' hospital course granted them, there being one "full" scholarship awarded yearly at each of the eleven great medical schools. These scholarships are awarded on competitive examination in the elementary scientific subjects. The choice of a medical school for their sons is always a matter of some difficulty to parents who are not connected with the medical profession, and the undoubted fact that each of the great London medical schools possesses teachers of note whose names are famous in their profession adds considerably to this difficulty. If it was obvious that the teachers and methods of teaching at any of the hospitals were immeasurably superior to those at some of the others, the choice of a medical school would be considerably narrowed and so made easier. But each of the great hospitals can boast of having specialists and consultants of the greatest eminence on their staffs, and so the parent's choice can scarcely be influenced by this consideration.

Perhaps the chief way in which the leading hospitals differ from each other is in regard to the amount of practical experience which they are able to offer to their students, and it is in this respect that a small medical school is unquestionably at a disadvantage as compared with larger institutions of the kind. And, not unnaturally, our four largest hospitals have developed in connection with them the finest medical schools in the country and reputations that inevitably reflect favorably in after life upon the work of the students who have been trained within their walls.

The "London," "Bart's," "Guy's," and "Thomas's" are nowadays household names.

The London Hospital, with its 922 beds, probably offers the largest amount of clinical experience. In addition to the in patients, the number of out patients last year reached the enormous number of 253,681, and between 17,000 and 18,000 operations were performed.

There is one medical school which, owing to the fact that it is concerned with the interests of women students only, is bound to retain its individuality for many years to come. This is the London School of Medicine for Women attached to the Royal Free Hospital. The winter session at this hospital and training school will open on October 3d, when an inaugural address will be delivered by Mr. E. W. Roughton, F.R.C.S., surgeon to the Royal Free Hospital, on Woman's Sphere in Medicine. At St. George's Hospital the annual inaugural oration will be given by Dr. Squire Sprigge, editor of the *Lancet*, who will speak on Prizes and also distribute awards to successful students there.

The *Pall Mall Gazette* has been publishing a series of articles on The Drug Habit. In the last of these it states that, as a result of its inquiries, it has ascertained that the sale of drugs of the narcotic kind has decreased during late years, on account of restrictive legislation. It has certainly become more difficult to obtain such drugs as morphine and cocaine over the counter, but in the meantime the trade in sham tonics, containing as their chief ingredient alcohol, if no other pernicious agent, has developed enormously. Tens of thousands of pounds are being spent on advertising these compounds, a measure of the extent to which they are sold. The best of these, containing, besides wine, perhaps quinine with extract of meat in a digestible form, are valuable in the hands of medical men; used indiscriminately as "pick me ups" or cures for depression, they become harmful to the last degree. Puffed under fanciful names, these concoctions are taken by many innocent people who would be horrified to learn that they were dosing themselves with alcohol, while to the woman drunkard of the wealthiest classes they often provide a cloak under which she may indulge the morbid craving of which she is ashamed. In an editorial article a leading journal forcibly advocates the prohibition by law of the many quack medicines which owe their popularity to the alcohol, the cocaine, or morphine which they contain. This exposure has not led many newspapers to refuse advertisements of these compounds. Many newspapers put their endorsement to tht puffs by printing them in the form of sham editorial paragraphs, while in the real editorial department lamentations are published over the national vice.

The *British Medical Journal*, in its Students' Number this week, does not make very pleasant reading for the student just about to enter for the curriculum. On account of numerous complaints of lessened incomes and increasing expenses, the *British Medical Journal* made a special investigation into the matter, and the results of this inquiry show that these complaints were only too well justified by existing conditions. Dealing first with the question of the overcrowding of the profession, it was shown that medical men had increased in numbers in greater proportion to the general increase of population. The figures show that at the present time the number of possible patients for each medical man is 1,400, whereas in 1882 it was 1,700. Besides this, the returns of the registrar general show that the mean expectation of life has gradually risen and there is less average illness now than formerly. Again, the birth rate has fallen from 34.2 to 26.3 per 1,000. This has a double effect; there are fewer confinements for medical men to attend, and, in the second place, babies give rise to a good deal of medical work, and if the number is lessened the demand for medical work must lessen accordingly. To this may be added the fact that the proportion of confinements attended by midwives has constantly increased. Besides this, there are two other circumstances which tend to lessen the income of the medical man. One is that the government continues to throw from time to time sundry unpaid duties on the shoulders of medical men; the other is that the medical profession is habitually exploited by the general public. No other profession or trade has such a large proportion of bad debts. This outline is a faithful account of the present prospects of the general practitioner, and the outlook is far from rosy.

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Therapeutical Notes.

An Inhalation for the Relief of Painful Cough in Tuberculous Disease of the Larynx.—Howarth (*Practitioner*, August, 1910) has found an inhalation of the following composition to be effective in relieving the painful cough associated with tuberculous disease of the larynx:

℞ Menthol, ...
Oil of eucalyptus, ... } ....āā equal parts.
Spirit of chloroform,

M. et Sig.: Inhale ten to fifteen drops three or four times during each twenty-four hours.

Treatment of the Laryngeal Symptoms of Diphtheria.—Following a discussion of the various forms of laryngeal obstruction in children, Barwell (*Lancet*, August 13, 1910) touches on the treatment of the laryngeal symptoms of diphtheria. In diphtheria emetics should in general be avoided as depressing. However, if dyspnœa is marked in an early stage while the strength is well maintained an emetic dose of ipecac will often do good. Intubation or tracheotomy should not be long delayed, especially as the heart is already weakened by the toxines of the disease. The author does not discuss the relative advantages of these two operations, but remarks that intubation is of great value in the treatment of diphtheria in institutions where medical aid is always within reach, and that it appears from statistics to be the safer operation for children under five years of age, though this is very probably merely because it is often performed at an earlier stage than tracheotomy. If the latter is preferred a fairly low tracheotomy is advisable, both because the membrane may extend down the trachea and because the low operation is less irritating to the larynx and less often gives trouble in removal of the tube. The tube must be dispensed with as early as possible, for the longer the little patient becomes accustomed to it the more difficult it is to take it out. Two to four days is now usually sufficient for a case of diphtheria when antitoxine has been given; a fenestrated tube should first be inserted and kept closed for some time with a cork, in order to make quite sure that respiration is unobstructed. The treatment of nondiphtheritic membranous laryngitis is on similar lines and antitoxine must be given owing to the impossibility of at once excluding diphtheria. Calomel is much recommended; one or two grains every three hours until the bowels have acted freely and then three or four times a day in combination with iron.

Treatment of Hyperidrosis of the Feet.—Clair (*La médécine à bord*) advises a hot foot bath containing in solution about four grains of potassium permanganate or a solution of formaldehyde, U. S. P., in the strength of 1 in 250 parts. The feet are kept in either one of the solutions for a period of two minutes, after which they are washed with soap and water, rinsed in cold water and dried. The interior of the socks are dusted with a powder of the following composition:

℞ Menthol, ...gr. viiss;
Bismuth, benzoate, or salicylate ....ʒiiss;
Boric acid, ...℥iii;
Talcum, ...℥x.

The ingredients, all in a state of impalpable division, are mixed intimately to form a dusting powder.

REMEDIES OF RECENT INTRODUCTION.

(*Concluded from page 629.*)

Zincochinol is zinc oxide oxychinoline sulphate which is introduced as an antiseptic dusting powder and for general use as an antiseptic in ointments and pastes.

Zincopyrine is stated to be a double salt of zinc chloride and phenyldimethylpyrazolone. It is formed by combining one molecule of zinc chloride with two molecules of antipyrine. It is less caustic than zinc chloride and is not so toxic.

Zircon oxide has been proposed as a substitute for bismuth subnitrate and diaphanit (which see) in x ray examinations of the stomach. It is also known as kontrastin.

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SYSTEMATIC RESEARCH.

When a scientific investigator meets an acquaintance who has no conception of science, the latter is apt to ask, "What are you working on now?" He expects to be told of some definite practical desideratum which his friend is endeavoring to find out how to supply, for he is impervious to the idea that research itself points the way to its own continuance, and that such practical results as fill his mind exclusively are generally attained in a more or less incidental way; and the investigator is bored intolerably. Such reflections are most forcibly borne out by Dr. Leo Hendrik Baekeland in his presidential address, entitled Science and Industry, delivered at the seventeenth general meeting of the American Electrochemical Society, held in Pittsburgh last May (*Transactions of the American Electrochemical Society*, xvii, 1910). The entire address is exceedingly interesting and instructive, but we can here refer only to those portions of it which dealt particularly with the need of systematic research.

It was systematic research, says Dr. Baekeland, which filled the amazing gap between Benjamin Franklin's little revolving glass globe, "that would, at its best performance, and if the weather was not too damp, give off some small sparks," and "those monstrous generators of Niagara Falls, sensitive as a slender nerve, and yet running with the precision of a watch; distributing power and light to distant cities like Toronto and Syracuse; running heavy railroad trains as surely as the tiny drill of the dentist; converting ores into metals; transforming hundreds of tons of brine daily into caustic soda and bleach; changing mixtures of sand and coal into carborundum; ennobling plain coal into graphite or producing from coal and limestone new sources for illumination under the form of calcium carbide; or, again, fixing the nitrogen of the air on calcium carbide to change it into cyanamide, a most valuable synthetic fertilizer."

The popular appreciation of the value of research work is advancing, though there are still far too many dunderheads among men who "finance" (and therefore insist on managing) great industrial undertakings, often to their own ultimate discomfiture. Dr. Baekeland cites an amusing example of how such fools can sometimes be saved from the unfortunate consequences that would ensue if they had their way. A man who is now at the head of one of the largest engineering firms in Germany was urged by his commercial associates in business to buy an amount of copper large enough to supply them for their electrical installations for several years to come, because the price of copper was rising beyond precedent. The price went up faster and faster, but this did not seem to disturb the scientific director, who was eagerly following the results of some special research work giving reliable data about transformers and high voltage transmission. He cared not if copper became three times as high in price as it was then, for he felt sure that he could use wire so much the thinner and save money in the end. "What he foresaw happened; the price of copper dropped suddenly, and Ohm's law triumphed over copper speculators."

But the financiers who grasp the control of industrial operations are slow to learn. Some manufacturers, says Dr. Baekeland, conclude grudgingly and in a half skeptical way to organize a research department, either as a last resort to help them through certain difficulties or simply to imitate their more successful competitors and "be in style." Being totally unaware of the requirements involved in research work, they frequently engage a young man with little experience, one who, beyond what he studied in the technical school or in the university, has everything to learn, and then at the very start entrust him with most difficult problems. "His salary is none too high and his action is very much restricted; sometimes he is forbidden to study the current practical methods, or so called 'manufacturing secrets,' and is thus prevented from getting acquainted with the very problems he is supposed to solve." Moreover, his time is sometimes taken up with odd jobs of every kind. After a time, when practical results are not forthcoming fast enough, the bookkeeper confronts him with the list of expenses incurred in his work, and then there are comments to the effect that the same amount of money spent on a good salesman would have shown immediate results. A little later the research department is discontinued with the remark "Research does not pay; we've tried it."

In some other cases, as soon as certain results have been obtained, the matter is taken out of the chemist's hands before he has been allowed time to try his methods fairly and develop them on a large scale. The work is now entrusted to the superintendent or the foreman—the "practical man," who is not too friendly to the research worker. As in all new processes, defects are soon shown, and naturally repeated failures and renewed trials on a practical scale are required before things work satisfactorily. At this stage the research chemist is allowed very little intervention, and subsequently it is declared that the whole thing was very imperfect before "the practical man" had his say. "Finally, initial expenses are charged against the research department and profits credited to the 'practical man.' "

A research department in an industrial establishment is not to be organized and operated by lavish expenditure for material appliances alone. "You might as well try to produce masterly paintings by installing an office management and a well organized paint and brush department and a library containing all that has been written on the art of painting next to a splendidly equipped studio, and then leave out the real artist who will do the painting." And, again, "you might as well fill a hall with the marble statues of Greek poets and imagine that they will write poetry for you" as expect to conduct chemical research to advantage if the chemist himself "is not a man alive with his subject, if he is not enthusiastically imbued with his opportunities, if he is not qualified for his task not only by scientific training, but specially by a natural gift of discrimination between what is most important in a problem and what is secondary to it."

Dr. Baekeland is a chemist, and it was natural that in his address, delivered before an assembly of chemists, he should adopt chemical research as his particular theme; but chemical investigation may well be taken as the type of all inquiry of an experimental nature, and his remarks are applicable to the whole range of the sciences. In medicine, perhaps animal experimentation is more closely analogous to the chemist's researches than some other studies subsidiary to the healing art. We do not often perform a preconceived experiment with the expectation of settling a certain doubtful point on a given occasion; we work patiently and systematically day after day, hoping and believing that the point in question will be reached in due course and made plain.

EHRLICH'S 606.

We have to correct a statement in our editorial of August 27th, in which we said that dioxydiamidoarsenobenzol was not patented. In a communication from one of Ehrlich's assistants we are informed that 606 is patented and manufactured by a chemical firm in Germany. Professor Ehrlich is independently wealthy himself and does not derive any benefit from the drug. Fifty per cent. of the revenues will go to the Speyer House, an institution founded by the well known Frankfort family of that name and in its purposes not unlike the Rockefeller Institute of New York, while the manufacturer receives the other half. The taking out of a patent is done only to insure the production of a physiologically correct and stable article, put up entirely according to the instructions of Ehrlich.

OLIVER WENDELL HOLMES AND PUERPERAL FEVER.

The story of the early struggles of Holmes and Semmelweis to obtain a hearing for what is now everywhere accepted as the true ætiology of puerperal fever, and of their utter failure, has often been told, but never more effectively than it was told by Dr. Henry Schwarz, of St. Louis, at the recent annual meeting of the American Association of Obstetricians and Gynæcologists, held in Syracuse last week. So far as Holmes was concerned, the story is by no means creditable to the medical profession of the United States. Dr. Schwarz imputed Holmes's failure largely to the opposition of two famous American obstetricians of the period, Meigs and Hodge, and he added that no American textbook of obstetrics now current, save Dr. Barton Cooke Hirst's, gave Holmes the proper credit for his pioneer work.

Holmes proclaimed the infectious nature of puerperal fever in 1843; Semmelweis did the same thing in 1847. Each of them based his contention on facts which it was easy to ignore or explain away in those days of adoration of authority and of utter ignorance of the germ theory of disease. Holmes had made a good fight, but, having failed, he could afford to fold his arms and wait for the future to justify him. His failure was not disastrous to him, for he was not dependent upon the practice of medicine for either reputation or livelihood; his literary renown even then was sufficient to buoy him up under the aspersions that were cast upon him. But it was not so with poor Semmelweis; to have his contention discredited was to find himself practically debarred from practising his profession, and he died broken hearted, an inmate of a retreat for the insane.

But we read that "seven cities claim great Homer dead through which the living Homer begged his bread," and that spirit has in recent years been shown again by Semmelweis's native city of Budapest, where there are now to be found a handsome monument to his memory, a commemorative tablet affixed to the house in which he was born, and a street bearing his name. All this recognition of Semmelweis's great work is tardy, to be sure, but it exists; so much cannot be said of us with regard to Holmes. It is intelligible, of course, that Holmes's great literary fame has led us to overlook his labors in medicine, but, as Dr. Schwarz insisted, it does not render the oversight defensible. It will be to our everlasting disgrace if we of the American medical profession do not soon take measures to perpetuate by some tangible memorial the greatness of the service which Oliver Wendell Holmes sought to render to mankind by affirming and proving the infectiousness of puerperal fever and by insisting on the adoption of means for its prevention.

VACCINE THERAPY.

Sir Almroth E. Wright, in his introductory address delivered before the Royal Society of Medicine on May 23, 1910 (*Lancet,* September 17th), gives his conception of the rationale of vaccine therapy as the exploitation, in the interest of the infected tissue, of the unexercised immunizing capacities of the unaffected tissues. There exists a correlation between the vaccine and the antibacterial defenses of the body. This can easily be demonstrated by the opsonic index, which accurately measures the opsonic power of the blood, that is, the antibacterial defenses of the body.

The limitations of vaccine therapy, as Wright sees them, are: "1. Vaccine therapy can be applied only where an exact and complete bacteriological diagnosis has been made, and where the diagnosis is kept up to date. 2. It can be applied only by those who have some acquaintance with bacteriology, some understanding of the rationale of vaccine therapy, and a knowledge of the dose of the particular vaccine which it is proposed to employ. 3. A limit is placed to the efficacy of inoculations by the fact that there are definite limits to the responsive power of the patient. 4. Successful results can be obtained only where an efficient lymph stream can be conducted through the foci of infection. 5. In long standing infections vaccine therapy can give definite results only after a long succession of inoculations, and there is no security against a relapse until the infection has been completely extinguished. 6. In a not inconsiderable percentage of cases it is essential to success that the dose of vaccine shall be controlled by the measurements of the opsonic index."

We have, continues Wright, in addition to the clinical condition, which cannot tell us whether the infection has been extinguished, two methods by which we may see how we have progressed: 1. We have an automatic check upon the progress of the patient if the index is being regularly taken; and if we find that the opsonic index maintains itself at a normal or somewhat higher level, we may confidently conclude that the patient is making good progress. 2. Where we have reason to believe that the infection may have been extinguished, and want to make certain that this is really the case, we may tentatively give up the inoculations but continue to make measurements of the opsonic index. If, under these circumstances, we still find the opsonic index remaining normal month after month, we may conclude that the infection has been extinguished.

In certain cases we may add to these two methods one of the following tests: 1. When a certain region is the focus of the infection we may induce active hyperæmia by applying a bandage to the vein in such a way as to obstruct the blood current, and when a transudation of lymph has in this manner been obtained, the lymph is driven back into the circulation by massage or active movements. If the opsonic index is still the normal the infection has been cured. 2. Similar in theory to the first test is the second, in which the patient's blood is examined before and after severe exercise.

THE PHYSICIAN AS A BACTERIOLOGIST.

In the same address Wright takes up the question of whether the physician who uses vaccine therapy should be a bacteriologist, and says that the medical man who has recourse to vaccine therapy ought to have a familiar acquaintance with the microbes which affect the human body. He ought to appreciate the fact that vaccines owe their efficacy to the reaction they set up in the tissues, and not to any action exerted directly by the vaccine upon the invading microbe. He ought to have mastered the general principles of immunization. He ought to know in connection with each vaccine the minimum effective dose and the medium or average dose. He ought to know the general conditions which affect the sensibility of the organism. He ought to understand how to adjust the dose to the requirements of the individual patient. And he ought to have a knowledge of the conditions which obtain in the focus of infection and of the methods of overcoming the difficulties which are introduced by these conditions. If vaccine therapy demands all this from the physician, Wright concludes, he must of necessity be a bacteriologist, and the teaching and practice of medicine must be reorganized upon a bacteriological basis.

News Items.

Changes of Address.—Dr. Edward Adams, to the Eldorado Apartments, 300 Central Park West, New York.

Dr. John J. Moorhead, to 301 West Eighty-ninth Street, New York.

Dr. F. M. Townsend, to 65 West Forty-fifth Street, New York.

Infantile Paralysis in Pennsylvania.—Reports received at the State Department of Health show that over seven hundred cases of infantile paralysis have been reported in Pennsylvania since July 1st. Practically every county in the State has reported the disease.

Personal.—Dr. Belle J. Allen, an alumna of Boston University, was selected from among one thousand applicants as the head of the new Memorial Hospital in Baroda, India, which was opened recently. This hospital was built in memory of Mrs. Butler, who was instrumental in sending the first woman physician to India in 1869.

The Maryland Conference of Charities and Correction will hold its sixth annual conference in Frederick, on Thursday, Friday, and Saturday, November 17th, 18th, and 19th. A splendid programme has been prepared which includes addresses by Professor L. H. Bailey, of Cornell University, and Professor Irving Fisher, of Yale University.

The Samaritan Hospital Medical Society, Philadelphia, met on Saturday evening, September 24th, for the first time this fall. Dr. G. Morton Illman presided. Papers on subjects relating to departmental work were read by Dr. W. Wayne Babcock, Dr. J. C. Applegate, Dr. Frank C. Hammond, Dr. Wendell Reber, and Dr. Nathan G. Ward.

The Richmond, Va., Academy of Medicine and Surgery.—At a meeting of the academy, held on Tuesday evening, September 27th, the programme included a paper by Dr. A. H. Straus entitled The Bacteriological Diagnosis of Diphtheria, and a paper entitled Intubation for the Relief of Stenosis in Laryngeal Diphtheria by Dr. P. D. Liscomb.

The Brooklyn Committee on the Prevention of Tuberculosis opened its health and hygiene exhibit on Monday, September 26th. Many new and interesting features have been added. A large phonograph is operated with new records that explain the exhibit and give the details of the tuberculosis law. Illustrated lectures are given on Wednesday and Saturday evenings.

An Outdoor School for Anæmic Children.—Forty anæmic school children of Public School 38, in Chelsea Park, at Ninth Avenue and Twenty-seventh Street, New York, are to study out of doors all this school year in a portico one hundred and sixteen feet long, which is being built south of the school in the children's playground. Awnings will be let down in case of hard storms. The portico is completed excepting a cement floor.

The Medical Society of the County of Kings, N. Y.—The one hundred and ninth regular meeting of the Section in Pædiatrics was held on Wednesday evening, September 28th. Dr. Emma H. Antonius read a paper entitled Personal Experience in Infant Feeding, and Dr. Frank Bethel Cross read a paper on the Treatment of Constipation in Children. The officers of this section are: Chairman, Dr. Walter D. Ludlum; vice-chairman, Dr. William M. Hutchinson; secretary and treasurer, Dr. Alexander Spingarn.

Plague in Hawaii.—The last case of human plague at Honolulu occurred on July 12, 1910, and the last plague infected rat was found at Aiea, nine miles from Honolulu, on April 12th. At Hilo the last case of human plague occurred on March 23d, and the last plague infected rat was found in Piihuona, four miles from Hilo, on April 9th. Passed Assistant Surgeon Ramus reports that during the week ending August 27th the total number of rats and mongoose taken was 780, and the average number of traps set daily was 1,738. Ten medical officers of the Public Health and Marine Hospital Service are conducting the national quarantine, and are assisting the territorial health board in preventing the recurrence of plague by the extermination of rats and the continuous bacteriological examination of those captured. During the last fiscal year 25,000 rats were examined in the laboratory, only one rat being found infected with plague

Quarantine on the Black Sea.—In a report dated August 22d, sent to the Department of State, Consul Jewett states that sailing vessels arriving from Russian ports of the Black Sea will undergo quarantine at Surmeneh. The station has been improved in equipment and the personnel enlarged. Four small cruisers and gunboats have been assigned to watch the Black Sea coast and to enforce quarantine measures. Physicians have been sent to certain coast towns to investigate sanitation conditions.

The Colorado Homœopathic Medical Society held its twenty-fifth annual convention in Denver during the week ending September 17th. In point of attendance and character of the programme the meeting was said to be the most successful in the history of the organization. Dr. L. E. Bartz, of Windsor, was elected president; Dr. E. B. Swerdfeger was elected first vice-president, and Dr. Margaret H. Beeler second vice-president; Dr. C. M. Worth was reelected secretary, and Dr. J. B. Brown was reelected treasurer.

The Directorate of the Gibbs Laboratory.—Captain Leon T. Le Wald, of the Medical Corps of the United States Army, has resigned his commission to become director of the Edward N. Gibbs X Ray Laboratory, succeeding Dr. E. W. Caldwell in this position. The Gibbs laboratory is a part of the New York University and Bellevue Hospital Medical College, and Dr. Le Wald will also be instructor in röntgenology in the university. Dr. Le Wald was instructor in pathology at this university prior to his entrance into the Army in 1902.

The Clinical Society of the New York Throat, Nose, and Lung Hospital will hold a stated meeting on Monday evening, October 3d. This will be a clinical meeting, and members connected with all the departments of the hospital are invited to present cases, specimens, and instruments. A general discussion of each case will follow, and all who attend are invited to take part. The officers of this society are: President, Dr. C. Johnstone Imperatori; vice-president, Dr. Perry B. Hough; secretary, Dr. Nathan H. Stark; treasurer, Dr. Thomas A. Gonzales.

Gifts and Bequests to Charity.—By the will of Mrs. Elizabeth Dunleavy, St. Vincent's Hospital, New York, will receive $1,000.

Through the will of Joseph E. Schoenberg, the National Jewish Hospital for Consumptives, Denver, will receive $1,000.

At the annual meeting of the Aid Society of St. Joseph's Hospital, Far Rockaway, N. Y., announcement was made that about $6,000 had been raised from the bazaar which was held on the grounds of the hospital the latter part of August.

The Mississippi Valley Medical Association.—At the thirty-sixth annual meeting of this association, held in Detroit, Mich., on September 13th, 14th, and 15th, under the presidency of Dr. Frank P. Norbury, of St. Louis, Mo., officers for the ensuing year were elected as follows: President, Dr. Robert H. Babcock, of Chicago; first vice-president, Dr. Arthur D. Holmes, of Detroit; second vice-president, Dr. Charles E. Barnett, of Fort Wayne, Ind.; secretary, Dr. Henry Enos Tuley, of Louisville (reelected); treasurer, Dr. S. C. Stanton, of Chicago (reelected). The selection of the place of meeting and of the chairman of the Committee of Arrangements for 1911 was left to the Executive Committee with power to act.

The Medical Society of the State of Pennsylvania will meet in annual session in Pittsburgh on October 3d, 4th, 5th, 6th, and 7th, under the presidency of Dr. Theodore Burton Appel, of Lancaster. The oration in surgery will be delivered by Dr. John B. Deaver, of Philadelphia. An important feature of the programme will be a symposium on tuberculosis. J. Byron Deacon, the executive secretary of the Pennsylvania Society for the Prevention of Tuberculosis, will present a comprehensive report of the tuberculosis situation in the State, and will compare the work done in Pennsylvania with what has been accomplished elsewhere. Mr. Alexander M. Wilson, director of the sociological department of the Henry Phipps Institute, will open the discussion. A criticism of Pennsylvania's methods for caring for the insane will be the subject of a paper by Dr. Charles W. Burr, which will be discussed by Dr. Charles K. Mills. An excellent programme of scientific papers has been prepared, and the meeting gives promise of being specially interesting.

A Floating Hospital for the Babies in Philadelphia.—When another summer comes it is believed that a long cherished plan of Dr. Joseph S. Neff, director of the department of health and charities, will be put in operation. That is the establishment of a floating hospital for the benefit of the babies of Philadelphia. Early in the summer Dr. Neff spoke of this project, and since then has given it so much thought that in his coming report to Mayor Reyburn he will have a definite plan to submit. Mayor Reyburn, it is said, favors the idea, and will send a special message to councils asking that an appropriation be made for the purpose. The plan is to lease or buy a steamboat or a barge, to be equipped with all hospital facilities and appliances. If a barge is used, it is to be towed by a tug. In either event, the sick babies and their mothers are to be given medical attention upon the water, away from the heat of the city, and by this means Dr. Neff is confident that the summer mortality among infants will be greatly reduced.

Infantile Paralysis to be Reported in New Jersey.—At a meeting of the Board of Health of the State of New Jersey, held on August 30, 1910, the following resolution was adopted:

> *Resolved*, That in accordance with the power conferred upon the State Board of Health by the provisions of section 1 of chapter 260 of the laws of 1895, anterior poliomyelitis or infantile paralysis is hereby added to the list of diseases which shall hereafter be reported by physicians to local boards of health, in accordance with the provisions of said act.

On account of the increased number of cases of this disease which are occurring in this and other States it is essential that statistical data should be gathered as to the localities which are affected, and that careful study of individual cases should be made by physicians. It will aid in these inquiries if each physician will forward to the office of this board a list of cases of infantile paralysis which have come under his medical supervision during the year 1909, and also from January 1st to September 1st of the present year.

The Medical Society of the County of Chemung, N. Y.—A regular quarterly meeting of this society was held in Elmira on Tuesday, September 20th. The programme included the following papers: Passive versus active methods of Diagnosis, by Dr. C. L. Squire; Bier's Hyperæmic Treatment, by Dr. R. G. Loop; Report of a Case of Intestinal Obstruction, by A. J. Westlake. An important part of the proceedings was the adoption of resolutions auhorizing the secretary to request the assemblyman and State senator to oppose and do all in their power to defeat any measure that may be introduced which has for its object the restriction of animal experimentation. Nominations of officers for the ensuing year were made as follows: President, Dr. F. B. Parker; vice-president, Dr. Charles Haase; secretary, Dr. William Brady; treasurer, Dr. G. V. R. Merrill; board of censors, Dr. G. V. R. Merrill, Dr. C. G. R. Jennings, Dr. R. G. Loop; State delegate, Dr. G. V. R. Merrill; alternate State delegate, Dr. C. W. M. Brown; district branch delegate, Dr. E. T. Bush; Alternate district branch delegate, Dr. F. Woodhouse; chairman of Committee on Public Health, Dr. A. H. Baker; chairman of Committee on Legislation, Dr. R. P. Bush.

A Systematic Study of Infantile Paralysis in New York State is being made by the State Health Commissioner. He has been watching the prevalence of the disease, and says he is fully satisfied that a number of cases exist in various parts of the State. While recent investigations establish beyond a reasonable doubt that this is a communicable disease, it has not yet been positively determined by what means it is transmitted from one person to another. Recognizing, however, its accepted transmissibility, the State Health Department has placed it on the list of quarantinable diseases and now requires it to be reported and quarantined for a period of twenty-one days. With a view of systematically studying the cause and prevalence of this disease, Commissioner Porter has recently placed in the hands of every physician in the State blanks on which he urges a detailed report of every case which has arisen since January 1, 1910. This plan, it is thought, will not only result in the report of many cases, but furnish much valuable information regarding a disease concerning which there seems to be so little known, except its possible serious consequences. The State Health Department urges united cooperation of the citizens in the State in its energetic combat against infantile paralysis.

The Homœopathic Medical Society of the State of Pennsylvania met in annual session in Williamsport, on September 20th, 21st, and 22d, under the presidency of Dr. H. F. Schantz, of Reading. There was a large attendance of members, and the programme presented included many important papers by the leading homœopathic physicians of the State. The following officers were elected to serve for the ensuing year: President, Dr. W. Alvah Stewart, of Pittsburgh; first vice-president, Dr. F. D. Brewster, of Scranton; second vice-president, Dr. E. C. Blackburn, of Williamsport; recording secretary, Dr. E. H. Pond, of Pittsburgh; corresponding secretary, Dr. E. M. Gramm, of Philadelphia; treasurer, Dr. Ella D. Goff, of Pittsburgh.

Precautionary Measures Against the Importation of Cholera into France.—In view of the spread of cholera in Russia measures are ordered to be adopted at the French frontier stations as follows: Persons from cholera infected localities who shall on arrival at the French frontier present symptoms of cholera shall be held in isolation until examined by a physician. If found free from cholera they may proceed to their place of destination. If found to be attacked by cholera they shall be removed to a suitable place where all measures of treatment and prophylaxis may be carried out. All public conveyances used by cholera infected persons shall be promptly disinfected. Persons arriving from cholera infected localities shall report the fact to the authorities at their place of destination. The importation of articles which may convey infection is prohibited.

Society Meetings for the Coming Week:

Monday, *October 3d.*—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association (annual); Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club of Newark, N. J.; Hornell, N. Y., Medical Society; Hartford, Conn., Medical Society.

Tuesday, *October 4th.*—New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Medical Association of Troy and Vicinity; Long Island, N. Y., Medical Society; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Bridgeport, Conn., Medical Association.

Wednesday, *October 5th.*—Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

Thursday, *October 6th.*—Dansville, N. Y., Medical Association.

Friday, *October 7th.*—New York Microscopical Society; Gynæcological Society of Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society of New York.

Saturday, *October 8th.*—Therapeutic Club, New York.

Philadelphia Medical Colleges Opened.—Opening exercises were held on Monday evening, September 26th, at three of Philadelphia's leading medical colleges, Jefferson, Medico-Chirurgical, and Hahnemann. Jefferson Medical College formally opened its eighty-sixth annual session with special exercises. The address was delivered by Dr. G. C. Savage, professor of ophthalmology in Vanderbilt University, a graduate of the class of '78. With an enrollment far in excess of last year and the outlook declared to be all that could be desired, the Medico-Chirurgical College held its opening exercises in the clinical amphitheatre in the presence of more than five hundred students and their friends. Mr. Henry F. Walton, president of the Board of Trustees, presided. The introductory and principal address of the evening was made by Prof. George M Boyd, who holds the chair of obstetrics in the college. Addresses were also made by Professor Seneca Egbert, dean of the Medical Department; Professor L. N. Broomell, of the Dental Department; Professor I. V. Stanislaus, of the Department of Pharmacy, and Professor George Meeker, of the Department of Chemistry. After the addresses the following additions and changes in the medical faculty were announced: Dr. Andrew Callahan was made lecturer on the practice of medicine; Dr. F. S. Bowman was made lecturer on anatomy; Dr. Robert Boyer, demonstrator of anatomy; Dr. Charles B. Reynolds, lecturer on obstetrics; Dr. Henry Fox, of Ursinus College, demonstrator of biology; Dr. Joseph Harold, professor of minerals and assaying in the department of pharmaceutical chemistry.

Mortality Statistics of New Orleans.—During the month of August, 1910, there were reported to the Board of Health of the City of New Orleans 544 deaths from all causes, 312 white, 232 colored, in an estimated population of 373,000; 272,000 white, 101,000 colored, corresponding to an annual death rate in a thousand of population of 13.76 for the white population, 27.56 for the colored, and 17.50 for the total white and colored population. The deaths of children under one year of age numbered 93; 58 white, and 35 colored. There were 46 stillbirths, 24 white and 22 colored.

The Cholera Outbreak in Russia.—The following summary of the cholera situation in Russia from the date of the outbreak was reported to the Department of State on August 30th by Minister Rockhill at St. Petersburg: The official statement of cholera returns for all Russia shows from outbreak to August 20th, 134,163 cases, with 60,396 deaths. Acting Assistant Surgeon De Forest at Libau reports, August 28th and September 3d: During the week ending August 26th there were reported in the city and suburbs of St. Petersburg 487 cases of cholera, with 170 deaths, and in all Russia exclusive of St. Petersburg 17,636 cases, with 7,549 deaths. During the week ended September 2d, 417 cases, with 154 deaths, were reported in St. Petersburg and suburbs, and in all Russia exclusive of St. Petersburg 13,637 cases, with 6,947 deaths.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending September 24, 1910:

	September 17th.		September 24th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	617	148	662	156
Diphtheria and croup	143	8	188	19
Measles	60	6	51	6
Scarlet fever	83	2	82	4
Smallpox	..	..	..	..
Varicella	19	..	9	..
Typhoid fever	165	12	133	11
Whooping cough	60	3	50	5
Cerebrospinal meningitis	3	6	6	2
Total	1,150	185	1,181	203

Vital Statistics of New York.—During the week ending September 17, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,250, corresponding to an annual death rate of 13.58 in a thousand of population, as compared with a rate of 14.67 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.15; the Bronx, 13.41; Brooklyn, 13.05; Queens, 12.12; Richmond, 13.86. There were 159 stillbirths. The deaths of children under five years of age numbered 448, of whom 329 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 190; over five years of age, 199. There were 12 deaths from suicide, 2 from homicide, and 75 due to accidents. One thousand two hundred and forty-four marriages and 2,659 births were reported during the week.

Protective Measures Against Cholera in Germany.—The sanitary department of the Prussian government has recently inaugurated a careful bacteriological examination to be extended to all raftsmen at the Prussian frontier. Last year only the suspected sick persons were subjected to this bacteriological control, but this year it is applied to all that enter the country. At the control station of Schillno, located where the river Vistula enters Prussia, two suspects were thus identified a few days ago as carriers of the bacillus of cholera, although no other evidences of the disease were found, and as yet both suspects appear to be entirely well. A similar bacteriological laboratory has been created recently at Schmalleningken in east Prussia on the river Memel for the many raftsmen crossing the border line at that point. The rigid sanitary control exercised at the various stations is continued, all Russian emigrants being bathed and their baggage and clothes thoroughly disinfected. Any case of cholera discovered at these stations is immediately reported to the port physician by wire, in nearly all instances to either the port physician at Hamburg or Bremen where the emigrants embark. On their way to these ports all emigrants are subjected to a second medical examination at Ruhleben near Berlin.

Cholera in Italy.—According to press despatches, cholera continues to spread in Italy. Four cases of the disease were reported in Rome on September 26th, one of which proved fatal. In Naples the situation is serious. It is reported that over one hundred thousand inhabitants have fled from the city. A number of persons have died in the streets and the greatest excitement prevails. Immigrants from America were forcibly prevented from landing, and a rigid quarantine is maintained. The municipal authorities have ordered the destruction of the oyster beds, which are situated close to the sewer outlets. Notwithstanding the fact that the widespread nature of the infection is known to the public, the official report announces only five cases and three deaths in the entire province of Naples, three cases and one death in Apulia, and one death in the province of Foggia. Despatches from Sicily report violent scenes there, the peasants everywhere opposing the work of the sanitary officials. There are three cases of suspected cholera in Palermo, two in Turin, and one death in Leghorn which is believed to be from cholera.

The Health of Chicago.—During the week ending September 17, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 99 cases, 11 deaths; measles, 21 cases, 1 death; whooping cough, 42 cases, 4 deaths; scarlet fever, 80 cases, 6 deaths; diphtheria, 107 cases, 7 deaths; smallpox, 1 case, 0 deaths; chickenpox, 15 cases, 0 deaths; tuberculosis, 115 cases, 52 deaths; pneumonia, 15 cases, 43 deaths; German measles, 1 case, 0 deaths. One case of diarrhœal disease was reported, and six cases of contagious diseases of minor importance, making the total number of cases reported 503, as compared with 407 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 131, and there were 25 deaths due to congenital defects and accidents. The total deaths of children under five years of age numbered 214, of whom 153 were under one year of age. The total deaths from all causes, exclusive of stillbirths numbered 558, corresponding to an annual death rate of 13.2 in a thousand of population, as compared with a death rate of 14.5 for the preceding week, and 14.1 for the corresponding week last year.

A Low Death Rate in the United States Last Year.—The lowest death rate on record for the United States is reported by the Census Bureau bulletin on mortality statistics for 1909. The rate, which is given at fifteen in one thousand of the provisionally estimated population last year, was four tenths per cent. less than the estimates made in the year 1909 for the registration area. In the judgment of the census officers an era of low mortality has begun. The death rate this year is believed to be the lowest that ever occurred in the history of the United States. During the past year, mortality was distributed with more than ordinary uniformity and no epidemics other than a few of local extent were found to have occurred. The total number of deaths returned from the registration area for 1909 was 732,538, in increase of 40,964 over the number, 691,574, returned for 1908. Of the total number in 1909, there were 398,597 deaths, or 54.4 per cent. among males, as compared with 54.3 in 1908. The largest number of deaths returned for any month in 1909 was 70,093 for March. With the great majority of the registration States and cities, it is the month having the largest number of deaths, while June is the month of lowest mortality. The provisionally estimated aggregate population of the registration area of the United States in 1909 is 48,776,893, or 55.3 per cent. of the total estimated population of continental United States. The official death registration area is composed of those States and cities which require the registration of a death before the issuance of a burial permit and which have complied with other requirements imposed by the Census Bureau as conditions precedent to inclusion in this area whose death returns are annually collected, tabulated, analyzed, and presented in bulletin and report form by the Census Bureau. In 1909, the death registration area included the following States: California, Colorado, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington, and Wisconsin. In addition to these returns of deaths were received from fifty-four cities in non-registration States, in which the registration under local ordinances is considered satisfactory.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 15, 1910.

1. The Present Status of the Treatment of Exophthalmic Goitre, By JAMES MARSH JACKSON and THEODORE JEWETT EASTMAN.
2. The Surgical Treatment of Exophthalmic Goitre, By CHARLES A. PORTER.
3. Distortion of the Face and Skull Due to Continued Fixed Posture in Early Infancy, By JOEL E. GOLDTHWAIT.

1, 2. **Goître.**—Jackson and Eastman give a review of the history of exophthalmic goitre, and we learn that when Kocher made his great bibliography of the subject in 1902 he was able to find 1,423 titles. There have been few diseases, say our authors, as to the origin of which more theories have been advanced than concerning exophthalmic goître. Heineck mentions seven theories which have been held, among them the cardiac, which assumes that the tachycardia is primary and the other symptoms are all secondary to it; the sympathetic, which assumes that all the symptoms are due to a disturbance of the sympathetic nervous system; the nervous, which has its basis in the fact that a neuropathic family history is found in some cases; the parathyreoid and the thymus theories, which attribute the cause of the disease to disturbances in these glands, and, finally, the thyreoid theory, the one which carries greatest weight at present and which is substantiated by clinical, experimental, and pathological evidence. Of the first four theories, that regarding the sympathetic nervous system is the only one which seems to have any evidence in its favor. Jonnesco says that he has cured a considerable number of the disease through severing the cervical sympathetic nerves leading to the thyreoid gland, but there is practically no other advocate of this practice now. Changes have been found in the parathyreoid glands in a number of cases, but injury of these glands has failed experimentally to produce the symptoms of Graves's disease. Falta, who with Eppinger and Rudinger has done the best work on the relation of the glands of internal secretion, explains the occasional occurrence of lesions of the parathyreoids by saying that "on account of the close approximation of the parathyreoids to the thyreoid gland, functional disturbances of the parathyreoid may occur as a consequence of rapid strumous enlargement or inflammation of the thyreoid." As for the thymus theory, autopsy statistics have not shown any connection between persistent thymus and Graves's disease. The theory that the thyreoid gland is alone responsible for the disease is the only one that has survived, and this is borne out by experimental and clinical evidence. It is found that the administration of thyreoid extract will produce the symptoms of the disease, and pathological examination of the thyreoid gland in cases of it constantly shows changes, proving that there is an excessive secretion of the thyreoid juice either from an increase of normal thyreoid tissue, or simple excessive secretion by a normal sized thyreoid. As to treatment the authors say that they have found, in a large series of cases, that the drug which gives the best results has been the neutral hydrobromide of quinine, the use of which was first suggested by Dr. Forchheimer, of Cincinnati. It is important that a strictly neutral salt be used, as the acid salt which is frequently dispensed does not give as good results. It is given in capsules containing five grains each, and to the limit of the patient's tolerance, which is rarely more than three or four capsules a day. Toxicity is shown by the appearance of tinnitus, and no further ill effects are experienced if the medicine is temporarily stopped when this appears. The administration of this medicine must be continued for a long time and it is well to tell the patients in the beginning that they will probably have to take it for months or even for two years or so. If this is not done, the patients are apt to become discouraged if they see no marked results after a few weeks. Very frequently the patients notice after a week or two of the treatment a diminution of the palpitation, the sweating, the tremor, and other nervous symptoms, and in many cases the thyreoid diminishes in size. The exophthalmos seems to be the last of the signs to disappear, and this may not be until the expiration of two or three years, while rarely the exophthalmos and tremor may persist more or less even after all subjective symptoms have disappeared. When this last occurs, the dose of the drug should be cut down even to two or three capsules a week, the patient being cautioned, however, to resume immediately the former dose at the first appearance of any of the old symptoms. The authors remark that their cases have often proved the close connection between the thyreoid gland and the genital organs. Thus, they have noticed that if the patient becomes pregnant the symptoms are often held in abeyance during the pregnancy, returning, however, after confinement. Again, relapses may occur at the menopause. When relapses occur, as is not uncommon, an active resumption of the treatment quiets them quickly. The authors are not certain how the quinine acts, though it seems most probable that it acts on the sympathetic system and thus puts an end to its stimulation of the thyreoid and the vicious circle which has already been mentioned.—Porter states that it is of utmost importance that the physician recognize that surgery, in properly selected cases, offers more and quicker improvement than medical treatment. To be successful, earlier operation must become the rule before incurable degenerations have developed. When reasonable medical treatment has been carried out, the surgeon should be consulted. While from the very nature of the disease permanent cures may not be common, permanent improvements follow timely and appropriate operation in the large majority of cases after medical treatment has proved unavailing.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 24, 1910.

1. A Case of Diffuse, Purulent, Ventriculoseptal Myocarditis with Arams-Stokes's Syndrome, By HARVEY G. BECK and WILLIAM ROYAL STOKES.
2. Study of a Case of Heartblock with Alternation of the Systolic and Diastolic Jugular Waves, By ISAAC IVAN LEMANN.
3. Instruction of the Public in Antituberculosis Measures by a Traveling Car Exhibit, By GEORGE HOMAN.
4. Alopecia and Seborrhœa, By CHARLES J. WHITE.

5. The External Preparations of the U. S. P. and National Formulary, By C. S. N. HALLBERG.
6. Medicopharmaceutical Ethics, By A. S. MUSANTE.
7. The New Test for Cancer of the Stomach, with Suggested Improvement, By J. W. WEINSTEIN.
8. A Study of the Bacterial Flora of the Nasal Mucosa in the Presence of Rhinitis, By WILL WALTER.
9. A Clinical Study of a Case of Pseudoleuchæmic Anæmia of Infancy (Von Jaksch), By THEODORE J. ELTERICH.
10. Choked Disc in Its Relation to Cerebral Tumor and Trephining, By ALFRED SAENGER.
11. Dislocation of Shoulder Joint Complicated by Fracture, with Report of Two Cases, By JOHN S. MCEWAN.
12. A Contribution to Experimental Human Poliomyelitis, By SIMON FLEXNER.
13. The Arsenical Treatment of Syphilis, By JOHN B. MURPHY.

4. **Alopecia and Seborrhœa.**—White remarks that alopecia accompanied by dandruff is the commonest types of loss of hair. Women are more prone to alopecia than men, in the proportion of 54 to 46. The possible and principal causal factors of alopecia are heredity in thirty per cent., dandruff in seventy-nine per cent., systemic depression in twenty per cent., fever in eleven per cent., and maltreatment of the scalp in fifty per cent. Alopecia simplex develops before the age of thirty in eighty-four per cent. of the men, but in only thirty-three per cent. of the women. Dandruff behaves in a similar manner and before the age of twenty-five attacks sixty-one per cent. of its future male victims but only thirty-two per cent. of its female. The loss of hair in alopecia furfuracea comports itself with these previous two findings, appearing before the age of twenty-five in sixty-seven per cent. of the men, but only in thirty-four per cent. of the women. We thus find that men are attacked earlier than women with alopecia and with seborrhœa, but that eventually women rather than men fall victims to these conditions. When dandruff is present it is apt to be abundant rather than slight, oily rather than dry, and to be accompanied by itching. With alopecia we find well marked cases rather than mild ones, located in the great majority of the cases in the frontal and temporal regions and accompanied by hair which is apt to be dry, split, short, and fine. The drugs most successful in the treatment of dandruff and loss of hair are euresol, bichloride of mercury, tannic acid, and chloral hydrate. The final results of treatment, in these affections are almost disheartening, but judged from a temporary point of view, we may expect good or very good response in forty-eight per cent. of men and in fifty-six per cent. of women. Seborrhœa may exist for years without entailing any appreciable loss of hair; nevertheless, dandruff does seem to be followed or accompanied by alopecia twice as often as not. Seborrhœa simplex is a disease of childhood or early adult life, developing before the age of thirty in seventy-one per cent. of men and ninety-six per cent. of women. Other seborrhœas of the skin such as acne vulgaris, acne rosacea, eczema seborrhœicum, and Fordyce's disease, may accompany loss of hair and dandruff. Their percentages of concomitance, however, vary, and consist of twelve per cent. in alopecia furfuracea and fifty-seven per cent. in seborrhœa simplex. Dyspepsia, on the other hand, exists in surprisingly small percentages in these cases, being present in only three per cent. in alopecia simplex, eight per cent. in alopecia furfuracea, and seventeen per cent. in seborrhœa simplex. Thus, seborrhœa simplex is a truer form of dandruff than that accompanying loss of hair. In alopecia areata and in ringworm of the scalp, the region most affected is the occipital. In alopecia areata dandruff is a frequent accompaniment, and we also find that one attack of the disease is apt to be followed by one or more later outbreaks.

7. **Test for Gastric Cancer.**—Weinstein remarks that the tryptophan test is a valuable sign in the diagnosis of cancer of the stomach. It is a sign in itself. The other signs of cancer, such as absence of free hydrochloric acid and presence of lactic acid, occult blood, coffee grounds, etc., have no value whatever, when taken individually, since they appear in conditions other than carcinoma. They are of value only in conjunction with other data. Moreover, none of these has any negative value. In these respects the tryptophan test is superior to any of them. It is inconstant, but positive results from the Widal test, the finding of the tubercle bacilli, the finding of plasmodia, are not constant features. However, in matters of such importance many observations must be made before conclusive deductions can be drawn. He cannot state whether it is an early sign of cancer. The test Weinstein describes as follows: Four or five hours after a regular dinner, some stomach contents are secured, filtered, and tested with bromin water for tryptophan. If present, reaction is positive. If absent, some of the filtrate transferred to a stoppered bottle and treated with a little toluol, or better still, without a preservative, is put in the thermostat and tested again for tryptophan twenty-four to forty-eight hours later. Although the reaction very often develops at room temperature, the mixture should be kept in a thermostat for the period stated. The most serious defect of the tryptophan test is its inconstancy. The reaction may be present in one specimen of stomach contents and absent in another from the same patient. The only safeguard against this uncertainty is, in case of negative results, to test three or four specimens obtained at different times. If three or four tests yield negative results, the case is most likely noncancerous. Satisfactory results are unattainable unless the contents are practically colorless. Admixture of coloring matter may make it impossible to conduct the test. The presence, therefore, of blood or coffee grounds in the contents makes it necessary to select another specimen for the test. In giving the patient a meal for the test, he should be instructed not to ingest any foodstuffs that are likely to impart color to the contents. Coffee, tomatoes, strawberries, etc., for obvious reasons, should be excluded. Tea must not be strong, else the contents will be sufficiently reddish to render the test useless. The fact that free hydrochloric acid interferes with the activity of the cancer enzyme or may destroy it altogether, is a serious obstacle in the way of reliable employment of the tryptophan test. Pepper interferes with the tryptophan bromine reaction; so does lemon juice. Sugar is an excellent stimulant to the secretion of cancer enzyme; beef is much better than chicken. A good meal for the

tryptophan test is one consisting of bread and butter, with meat prepared very plainly without extra seasoning or dressing, and some very sweet, weak tea. He has also secured excellent results by giving a meal consisting of white bread and very sweet weak tea without milk, the meal having been extracted in one hour.

8. **Rhinitis.**—Walter says that the evidence seems indicative that the diphtheroids, particularly *Bacillus segmentosus* of Cautley, are concerned in the production of so called common cold in its typical manifestation in the nose, and there is much evidence that it occurs in epidemic form. The *Micrococcus catarrhalis* is much more general in its manifestation, and is, probably, also epidemic and productive of a rather more severe inflammation, though mild epidemics occur. It seems likely that the symbiosis of these two organisms increases the virulence. The pneumobacillus of Friedlander is much more concerned in chronic conditions and is probably identical with the ozæna bacillus. The pneumococcus of Fränkel flourishes in any part of the upper respiratory tract and, when virulent, has been found in pure culture. Clinically the segmentosus infection is most likely to be in the nose, seldom in the trachea, but may cause otitis media; *Micrococcus catarrhalis* is most apt of all to invade the larynx and trachea, but may occur in the ear or nose and with variable virulence. The pneumobacillus is mostly confined to the nose and sinuses. Influenza is conspicuous by its absence. Pyogenic cocci are nonpathogenic locally, except as secondary invaders, and the probability is that only a limited number of strains are concerned in causation of acute infections on the mucosa, and these are not genuine coryza. The bacterial flora of the nose in America probably does not differ materially from that of other countries, but must of necessity be governed largely by environment, occupation, social position, and epidemics as to the ratios of finding.

12. **Poliomyelitis.**—Flexner remarks that the experimental study of poliomyelitis has yielded a large number of important facts relating to the spontaneous disease in man, such as the discovery of the nature of the virus, of many of its properties, of certain important clinical and pathological peculiarities of the disease, of the phenomena of immunity, of a mode of spontaneous infection, while they have served to establish a basis on which to develop measures of prevention, and on which to build hopes for the working out of a specific method of treatment. Moreover, the advance which has now been accomplished will make it possible to determine with accuracy whether poliomyelitis is a single clinical and pathological entity, or a generic name covering groups of symptoms and descriptive of the effects of certain lesions of the spinal cord and brain of which epidemic poliomyelitis is merely one, but the most important variety. It is not improbable that poliomyelitis, like meningitis, may be found to arise from several independent causes, and that epidemic poliomyelitis, like epidemic meningitis, may be distinguished among the varieties by being invariably the product of a specific microorganism. We possess already evidence to the effect that certain of the lower animals, among them poultry, the dog, and possibly the horse, are subject to poliomyelitis, due apparently in each instance to a cause peculiar to the species affected.

13. **Arsenic in Syphilis.**—Murphy has used sodium cacodylate for seven years. He has given it in doses of from one to two grains hypodermically into the muscles and it has a most striking effect on the syphilides, mucous patches, and primary chancre. From the latter the spirochætæ disappear completely in forty-eight hours, the induration is markedly reduced in twenty-four hours, and it becomes a soft, clean ulcer in seventy-two hours. From that time on it repairs with the same speed as an aseptic sore of mechanical origin would heal in the same tissue. In other words, the sodium cacodylate seems to destroy the specific microorganism (the spirochæta) which is keeping up the irritation. The adenopathies, except those with suppurating central foci, disappear in four or five days. The mucous patches repair in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx clear up and heal as healthy granulating wounds in from three to six days, and the perforating ulcers of the palate repair in their margins leaving the perforation in a healthy condition. He has not pressed it in the tertiary lesions but will not hesitate when such cases come under observation as the toxic limitations of the drug and the line of safety in its administration are known.

MEDICAL RECORD

September 24, 1910.

1. A Preliminary Report on Ehrlich-Hata's Preparation for the Cure of Syphilis, By M. S. Kakels.
2. A New Method of Treatment for Chronic Intestinal Putrefactions by Means of Rectal Instillations of Autogenous Bacteria and Strains of Human Bacillus Coli Communis, By Anthony Bassler.
3. A Possible Second Attack of Acute Anterior Poliomyelitis in the Same Patient, By Augustus A. Eshner.
4. A Brief Report of Three Unusual Cases of Retropharyngeal Abscess, By Alexander Spingarn.
5. Library Ventilation, By W. A. Evans.
6. Psychotherapy—Its Place—Its Uses, By B. C. Loveland.
7. Culture of Lactic Acid Bacillus in the Treatment of Chronic Specific Urethritis. A Preliminary Report of Thirty-four Cases, By G. H. Persson.
8. A Plea for the Study of Geriatrics, By J. L. Nascher.
9. A Practical Inexpensive Aseptic Blood Sticker, By C. C. Bass.

1. **Ehrlich's 606.**—Kakels has used Ehrlich's dioxydiamidoarsenobenzol in two patients, tertiary cases which had not yielded to any previous treatment. The results obtained, our author remarks, have been beyond expectation. He concludes that the time elapsed from the injection to the publication of his report, about two weeks, is too short to offer it as a complete observation of the results and final effect of the remedy. The remedy is being used according to the strict instructions of Professor Ehrlich. It is only injected in syphilitic patients free from other organic lesions, either of the liver, kidney, heart, or circulatory system. The eyes are examined in every instance for optic nerve lesions. It is also only injected in patients who are under hospital surveillance where accurate records can be taken.

2. **Treatment of Chronic Intestinal Putrefactions.**—Bassler remarks that in cases of chronic intestinal putrefaction wherein such conditions as carcinoma, colonic obstruction, abnormal organic disease of the pancreas or stomach, or gastrointestinal atrophy, etc., are not responsible for the condition, much benefit can come from raising the content of *Bacillus coli communis* in the gut by instillation either of the autogenous mixed forms or strains from other individuals. It is a fact that an individual who has high Gram positive stools can by the autogenous mixed or *Bacilli coli* instillations quickly have the running proportion between the Gram negatives and positives raised to a proportion equivalent to normal, this being due to a raising in the *Bacilli coli* and also to a diminution in the putrefactive Gram positives as the first become more numerous. With this more equal proportion between the two types of organisms, the conjugate sulphate of the urine diminishes and the patients make substantial improvement in the general body. Whether this raising of the Gram negatives is only due to the *Bacillus coli* or only to the *Bacillus lactosus aerogenes* (both being antitoxic to other bacteria), or to both together, is not always possible of determination, since both are much alike in their morphology and are Gram negative in character. But the cultural methods of distinguishing these two forms from each other and the results obtained when only the *Bacilli coli* were used in the injections make him believe that these disorders are due to a shortage or inactivity of the *Bacilli coli*, and that the latter are the most powerful agents in the human alimentary canal against the development of putrefactive conditions, and, that while outside of the intestine they are destructive and pyogenic, inside of the canal they are welcome hosts. From his experiences he is led to believe that these injections are a valuable method for treating these cases, quick and effective in the great majority, and not harmful in any. It is his belief that when anatomical conditions causing stagnation exist the results from these treatments are not capable of giving such good or substantial benefit. As regards the permanency of the benefit brought about it is apparent that about half of the cases which do not respond to simple treatments clear up inside of from one to three months of this treatment, but that the other half may not remain substantially benefited even when the instillations are kept up for longer periods. These latter show relapses when the instillations have been stopped for a week or more, quickly responding again when the injections are reestablished and some eventually clear up. It is probable that in the relapsing cases some permanent anatomical mischief preventing the establishment of a normal bacterial intestinal condition is present, which is either the cause of the development of the condition in the first instance and then its prolongation, or that there is present some anatomical or permanent functional change affecting normal secretions and motility of the digestive canal in asthenic ways. All cases of putrefactive conditions should first be treated by the routine methods of treatment for those conditions (diet, hygiene, tonics, etc.) before instituting the instillations. When, however, the latter are begun, the autogenous mixed bacteria should first be used, always employing fresh specimens of stools for inoculation of the media and this treatment kept up for about four weeks before a change to the strains of *Bacillus coli* is employed for a length of time, and when benefit had been established a return to the autogenous mixed bacteria may be used. If no benefit is noted on the *Bacillus coli* alone the *Bacillus lactosus aerogenes* may also be added to them, the two grown together in the single media, and these tried for a length of time. And if after these no sustained or apparent benefit is achieved then we have present some anatomical and permanent complication affecting the function of the gut, and the best we can hope for is a resort to surgery in some of the cases, or a longer interval continuation of instillations of whatever form of culture has shown the best results in that particular case. The bacteria were all grown under identical conditions, namely, in about 15 c.c. of two per cent. dextrose bouillon for twenty-four hours at 37° C., when the entire medium was injected. This was done after an enema of normal saline solution to cleanse the lower bowel, the patient being on the left side and remaining so for fifteen minutes after the instillation. The routine was one injection every fourth day until benefit was noted, and after this at longer intervals, the treatment being kept up for months if necessary.

5. **Library Ventilation.**—Evans observes that there are a few things in a library management or arrangement which can be done to lessen the danger of contagion. Periodical blowing out of the air of the room will do much toward keeping the bacterial content of the air low. To provide sunshine will lower the bacterial content of the air of the room. To keep the air of the room fresh will lower the danger of infection of the occupants of the rooms. To place the reading tables and chairs so that the readers will have their backs toward each other rather than facing each other across tables will decrease the danger of infection of readers in some measure, as it has reduced the consumption rate among cigarmakers. To provide convenient and commodious washing facilities will decrease infections. Several plans are available for the disinfection of returned books in a circulating library. Exposure to the sun's rays is effective and practicable in small libraries. As the stack room is used by but few people, good ventilation is not as necessary as in the reading room. If there are racks which are not against the wall they should be so built as to leave some clear open space under the books. Again, space should be left between the top of the books and the ceiling. If ventilation is by windows, the aisles should be so arranged as to make the best possible use of the windows. If the ventilation is artificial, the ducts should be carried under the stacks and the air introduced from under them, as the space under the seats is used in railroad car ventilation. Something can be gained in keeping dust off the books by having the stacks made with cloth backs instead of wooden backs, in order that the air getting into the shelf space will have its dust filtered out.

BRITISH MEDICAL JOURNAL.

September 10, 1910.

This is the educational number of the *British Medical Journal,* and as such contains an editorial on the Profession of Medicine, regulations of the General Medical Council, and a list of and notes on the universities, medical schools, and hospitals of Great Britain.

LANCET

September 10, 1910.

1. The Duty of the General Practitioner to the Deaf Child, By Macleod Yearsley.
2. On the Value of Blood Pressure Determinations in the Toxæmia of Pregnancy, By Hubert J. Starling.
3. Cæsarean Section in the Treatment of Eclampsia Gravidarum, with Notes of a Successful Case, By Frederick J. McCann.
4. Note on the Central Origin of Some Cases of so Called Heart Block. By James F. Goodhart.
5. Enteric Fever Spread by Milk Infection, Probably by Means of a Carrier Case, By Hugh Stott.
6. Vesicovaginal Fistulæ: a Summary of Twenty-one Cases Operated in, By William C. Bentall.
7. On the Failure of Nerve Anastomosis in Infantile Palsy, By A. Stoffel.
8. A Case of Chronic Constipation Treated by Faradism of the Large Intestine, By W. J. Burroughs.
9. A Case of so Called Chronic Neurasthenia Due to Abdominal Adhesions; Operation; Recovery, By P. Lockhart Mummery and E. Chittenden Bridges.

2. **Blood Pressure in Toxæmia of Pregnancy.**—Starling states that, from his observations, during the whole period of normal pregnancy the blood pressure is normal, that is from 110 to 120 mm. Hg. Any rise of blood pressure above 125 mm. Hg. should make us suspect that the pregnancy is not quite normal and should put us on the lookout for some degree of toxæmia. Pregnant women should therefore be encouraged to consult their medical attendants on the occurrence of the least sign of any abnormal symptoms, and the blood pressure should be estimated on every convenient occasion.

3. **Cæsarean Section in Eclampsia Gravidarum.**—McCann is in favor of immediate and rapid delivery in eclampsia gravidarum by Cæsarean section. He remarks that after delivery the convulsions do not always cease; indeed, they may even occur for the first time during the puerperium, but they do cease in a considerable percentage of cases. It may, however, be fairly stated that the termination of pregnancy exerts a more powerful and constant influence on the course of the disease than any method of treatment yet employed.

5. **Enteric Fever Spread by Milk Infection.**—Stott gives a statistical review for the last twelve years of enteric fever, as it appeared in a small district in Mid-Sussex. He says that there is not the slightest doubt but that the surface water and shallow well water in the district was polluted with fæcal matter, because several chemical and bacteriological examinations were made, and all showed that the water was polluted. The milk was the suspected source of infection in all the outbreaks, because all the primary cases obtained their supply from the same source. The period of incubation of the illness appeared to be short. The outbreak was sudden, and as soon as the milk supply was stopped the illness ceased. The illness was not of a severe type. Those in the families who drank raw milk in any quantities were generally the only members of the family to be affected. The source of infection in the milk appeared to arise from use of polluted water for washing churns or from water accidentally coming in contact with the milk. In all the outbreaks the usual precautions were taken. Patients were removed at once to isolation hospital and premises disinfected. Notices were issued to each house asking occupiers to boil all milk and water used for drinking from wells. Chemical and bacteriological examinations were made of water supplied from water companies, and water was found to be good. Sewers were flushed twice a week with water and chloride of lime. House to house inspections were made. Sanitary defects were remedied. Inquiry was made as to possible carrier case or cases. The sanitary authority was most willing to carry out any suggestions with regard to improvement of the sanitation of the district and prevent the recurrence of the illness.

7. **Failure of Nerve Anastomosis in Infantile Palsy.**—Stoffel condemns the conclusions reached by Warrington and Murray, who reported unfavorably on nerve anastomosis in infantile palsy. He says that there is good ground for assuming that their failures must be attributed, not to any fault in the idea or method, but to defects in their plan of operation and to a technique which is not free from objection. Nerve transplantation is a very difficult undertaking. If the procedure is so primitive as simple division of a nerve trunk or root and its insertion into another, success is not to be expected. The vital function of a nerve, a structure consisting of many individual elements, can only be restored by a highly developed procedure which takes account of all anatomical and physiological considerations down to the most minute detail.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 29, 1910.

1. Pantopon, By C. A. Ewald.
2. Critical Remarks Concerning the Ehrlich-Hata Treatment, By Blaschko.
3. The Biological Demonstration of Lipoid Substances in the Blood and Urine of Patients with Tuberculosis by the Complement Fixation Method and Their Signification, By Julius Citron and D. Klinkert.
4. Biology of Tubercle Bacilli, By Hans Aronson.
5. Pathogenesis of the Diarrhœas in Basedow's Disease, together with Remarks Concerning the Diagnostic Valuation of the Ferment Contents of the Fæces, By R. Balint and B. Molnar.
6. Two Tumors of the Suprarenal Capsules, By Seizo Suzuki.
7. A Case of very Large Sarcoma of the Pleura with Calcification Following Primary Sarcoma of the Tibia, By Grabow.
8. Early Symptoms and Serum Treatment of Tetanus, By Eyler.

1. **Pantopon.**—Ewald finds pantopon to be a preparation of opium that produces in general the effects of morphine but is borne better when used either to relieve cough, as a hypnotic, or to relieve pain. It acts also in doses so small that the morphine contained would be ineffective, and in some cases the effect is better than that of morphine. A notable instance is reported in which the pains of a tabetic crisis which had been affected little or not at all by injections of morphine were immediately relieved by an injection of pantopon. A prompt

result in a case of diabetes insipidus is also reported. Ewald hopes that the price may be reduced so the preparation may come into more common use as he considers it superior to morphine in many cases.

3. **Lipoid Substances in Tuberculous Patients.**—Citron and Klinkert say that we have three groups of antibodies: 1. The true antibacterial antibodies to bacterial albumin; 2, a subgroup of antibacterial antibodies to bacterial lipoid; and, 3, a group of antibodies, the prototype of which are the antibodies of Wassermann's reaction, the action of which we do not know accurately, but which is directed probably not against the spirochætæ, but against an autolytic substance of the syphilitic organism. They consider it probable that in tuberculosis in addition to the antibacterial antibodies there are others against pathologically changed organ substances. It is assumed that a degeneration of protoplasm may follow resorption of certain specific poisonous matters, and that then this degenerated protoplasm, alienated from its own organism, acts as antigen and sets up the formation of antibodies. The antibodies can then react *in vitro* not only with true antigen, but also with many lipoids and soaps.

5. **The Ferment Contents of the Fæces in Basedow's Disease.**—Balint and Molnar report a case of Basedow's disease with a critical study of the results of the examination of the fæces for trypsin and diastase. The case seems to show that the estimation of the diastase in the fæces may be of good service in the diagnosis of deficiency of the pancreatic secretion.

8. **Early Symptoms and Serum Treatment of Tetanus.**—Eyler presents the results of his study of twelve cases of tetanus. He says that the early symptoms are generally at first slight and transient and therefore not connected in the minds of the patients with the frequently slight or well healed injury. They appear usually a day or two after the infection, restlessness, a feeling of fright, nightmares, sleeplessness with very fearful dreams, difficulty of micturition, very frequently tenesmus at night, oppression in the chest, severe headache, change in the features, nosebleed, sweating, general feeling of weakness, yawning, dizziness, colic, and twitching pains in various places, great need of warmth, precede the local symptoms. The local and general symptoms are then considered at length. The paper is to be concluded in a future number.

MEDIZINISCHE KLINIK.

September 4, 1910.

1. Modern Treatment of Fractures of the Diaphyses of the Lower Limbs, By Wilms.
2. The Relations between Typhoid Fever and the Biliary Passages, By Ludwig Arnsperger.
3. More Concerning the Action of Ehrlich's Arsenobenzol in Syphilis, By K. Herxheimer and R. Schonnefeld.
4. The Combined Use of Old and New Tuberculin, By Hubert Kehl.
5. The Disinfectant Constituents of Soap as Such and of Afridol Soap, a New Antiseptic Mercurial Soap, By Walther Schrauth and W. Schoeller.
6. Contributions to the Relation between the Sensibility of the Skin and the Feeling of Vibration, and a Method of Studying the Feeling of Vibration in the Ear, By Emil Froeschels.
7. The Practical Value of Wassermann's Reaction in Syphilis. By Josef Guszmann and Eduard Neuber.
8. Thermopenetration Treatment (*Concluded*), By R. Schmincke.
9. The Treatment of Carcinoma with Cancroidin, By Max Kuell.
10. The Occurrence of the Biliary Coloring Matters in the Sputum, Urine, and Blood Serum of Patients with Pneumonia, By E. Herzfeld and O. Steiger.

2. **Typhoid Fever and the Biliary Passages.**—Arnsperger calls attention to the relation between typhoid fever and the biliary passages as shown by three facts: 1. The occurrence of cholecystitis in the course of, or soon after an attack of typhoid; 2. the persistence of living typhoid bacilli in the bile and within gallstones, as well as the relation of these bacilli to the formation of gallstones; 3, the occurrence of typhoid bacilli carriers, in whom the biliary passages form the chief resorvoir of the typhoid bacilli. He then reports a case in which an attack of typhoid fever followed an operation for gallstones.

3. **More about 606.**—Herxheimer and Schonnefeld at first made their injections only in the gluteal region, but latterly have made them both subcutaneously between the shoulder blades and intramuscularly into the glutæi. Both ways have advantages and disadvantages. If the injection is made subcutaneously to one side of the vertebral column either too high or too deep the patient complains either of radiating pains in the arm, or of a girdle like constriction of the lower part of the chest. If placed exactly half way between the shoulder blades the patients complain of only a moderate feeling of tension. Massage is applied after the injection until the mass is comparatively divided. In the glutæi the injection must be deep, wholly in the muscle and not at all in the fat. During the first day after the injection the patients have little trouble in walking, but sitting and lying are fairly painful. As most patients are accustomed to lie on the right side the injection is made in the left glutæus, in its upper, outer quadrant in order to avoid the neighborhood of the sciatic nerve. The therapeutic effect produced in both ways is the same. The pain produced at first by injections of acid solutions divided between the two glutæi was so great that patients could not be kept in bed even with the aid of morphine, but now by the use of the neutral suspension the pain is moderate and lasts between one and a half and six hours. Persistent infiltrates, probably because the injection was partly intracutaneous, were observed in two cases; in one an abscess formed at the end of twenty-four days; no arsenic could be detected in the pus. The temperature remained almost normal in two thirds of the cases, in the rest it ran as high as 38.5° C. for from three to five days and then became normal. In only one case the temperature rose to 40.1° C. after a chill on the evening of the day of the injection and fell the next morning to 36.8° C. Before treatment the internal organs, particularly the heart and kidneys, are examined. Contraindications are heart disease, fœtid bronchitis, and especially nonsyphilitic disturbances of the optic nerve. The dose at first was 0.2 gramme and increased slowly to 0.5 gramme. Only in one case of extremely obstinate syphilis was 0.6 given. In several infants and children from 0.02 to 0.05 gramme was used with the best result. The increase of the dose to 1.0 or 1.2 grammes they do not consider indicated, as they are perfectly satis-

fied with the results produced by 0.5. They report a number of cases of various forms of syphilis in which the results of the treatment were brilliant. They have treated over 200 patients and have met with one recurrence.

4. **The Combined Use of Old and New Tuberculin.**—Kehl prepared a solution of 1 c.c. of old tuberculin, 2 c.c. of new tuberculin (bacilli emulsion), and 7 c.c. of physiological salt solution containing one half per cent. of carbolic acid. This he terms solution VIII. By diluting one part of this with nine parts of carbolized salt solution he obtained solution VII. One part of solution VII with nine parts of the salt solution gave solution VI, and this method was repeated down to solution I, which contains in 10 c.c. 0.0001 mg. of old tuberculin and 0.000001 mg. new tuberculin. The results obtained with the very weak solutions lead him to declare that there appears in the effect not a simple addition of the two preparations, but a certain synergy of the two components that renders it possible to produce therapeutic effects with very much smaller doses than with either preparation alone. The first injection is of 0.1 of solution I. After an interval of three days the second injection of 0.2 solution I (I/0.2). Then follow I/0.3, I/0.5, I/0.7, II/0.1, II/0.2, and so on to IV/0.7, always at intervals of three or four days. Solution V should be injected at intervals of five days, solution VI at intervals of six days, VII of seven days, and VIII of eight days. The treatment is for the most part ambulatory, and he states to have obtained good results.

6. **Sensibility of the Skin and the Feeling of Vibration.**—Froeschels calls attention to the diminished sensitiveness of the skin of the external auditory canal, both to touch and tickling, in otosclerosis and has found the feeling of vibration to be proportional to the hearing in a high percentage of these cases.

8. **Thermopenetration.**—Schmincke declares that thermopenetration is the most ideal and efficient form of the use of heat because by this method alone is it introduced into the focus of the disease itself. The treatment is painless and without danger. It quiets pain. With its aid it is possible to kill gonococci in living tissue, or to inhibit their development. Its chief indication for this purpose is gonorrhœal arthritis, but other forms of arthritis are also benefited. The results in gonorrhœal disease of the epididymis, prostate, and urethra are good. It is useful also in tabes, sciatica, and neuralgia.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

August 30, 1910.

1. The Pathogenesis of Septic Abortion, By Schottmueller.
2. The Supplementation of the so Called Indifferent Thermal Baths by Inhalation of Their Radium Emanation in Rheumatic Diseases, By Pässler.
3. Arsenobenzol in Syphilis, By Spiethoff.
4. Unexpected Result in an Infant with Hereditary Syphilis after Treatment of Its Mother with 606, By Duhot.
5. Do Special Dangers Attend the Intravenous Injection of 606? By Ehrlich.
6. The Morbidity in Child Bed with Premature Death of the Fœtus and with Syphilis of the Mother, By Jaeger.
7. The Influence of Powdered Silver Nitrate upon the Development of Granulations and of the Epithelium, By Baruch.
8. Critical Contributions to the Diagnosis of Pulmonary Tuberculosis, By Koehler.
9. The Increase of Scleroma in East Prussia, By Gerber.
10. A Contrivance for the Photographic Registration of the Pulse, By Ohm.
11. Trial of a New Method for Testing the Length of Time Fluids are Retained in the Stomach, By Kaestle.
12. New Results in the Determination of the Position of Foreign Bodies by Means of the X Rays, By Gillet.
13. Treatment of Tonsillar Plugs, By Trautmann.
14. Professor Marc Dufour, By Rabow.
15. Friedrich Hermann de Leuw, By Schaefer.

3. **Arsenobenzol in Syphilis.**—Spiethoff in the title to his paper calls the preparation he used "arsenobenzol," but in the text he refers to it as 606. His experience since May 13th in fifty cases has been favorable throughout. During this time he has treated six cases in the primary stage, sixteen in the secondary, twelve in the latent secondary, ten in the tertiary, one of hereditary syphilis, three of tabes, and one of pernicious anæmia and severe secondary syphilitic anæmia. All the injections were intramuscular in the form of the perfect solution or of Michaelis's emulsion. When the emulsion was used the injection was made on only one side of the gluteal region in order to permit the patients to lie down; the choice of the site of the injection depended on the habits of the patient. In six cases he used a dose of 0.3, in two of 0.45, in four of 0.5, in twenty-six of 0.6. The influence upon the specific symptoms were often noticeable at the end of twenty-four hours. Primary affections were covered completely with epithelium in from one to three weeks; phimoses due to primary affection retrograded completely without local treatment within six days after a dose of 0.6, in about three weeks after a dose of 0.3. A particularly brilliant result was observed in a case of gangrenous primary sore which had nearly destroyed the prepuce and changed the glans into an ulcer; without local treatment all ulceration had disappeared at the end of seven days and had been replaced by healthy granulations; eight days later epithelization was complete. Mucous patches often disappeared completely in two or three days after a dose of 0.6, after smaller doses the retrogression required a longer time. In a case of broken down gumma of the turbinate the purulent secretion had stopped twenty-four hours after an injection of 0.6, on the second day the breathing through the affected side of the nose was free, on the third day the ulcer was closed and only a little infiltrate remained. No local treatment had been instituted. The case of hereditary syphilis was a badly nourished child two months old who had an extensive papulopustular syphilide, infiltration of the lips, coryza, and osteochondritis in one arm. An intramuscular injection of 0.02 gramme was given; three days later there was a distinct retrogression of the exanthem and of the infiltration of the lips; after seven days the arm, which had previously hung laxly down, moved somewhat, and after five days more active and passive motion of the arm was free and painless; twelve days after the injection the exanthem had

disappeared, the coryza was less, and the child's nutrition had improved. No retrogression of general glandular swelling was observed even in patients three months under observation. This contrasts sharply with the effect produced on individual glands in two cases; in one of these the patient had an indolent, hard gland as large as a hen's egg below the right ear which dated back to the outbreak of secondary symptoms, about two months, and had resisted all previous treatment. One hour after the injection of 0.6 the patient became nauseated; five minutes later he broke into a severe perspiration and at the same time was seized with such severe pain in the gland beneath his right ear that he could not move his head; after an hour the pain lessened and the gland grew smaller and smaller until six hours after the injection it was of only about one third its former size and after twelve hours more was no larger than the other glands of the neck. Spirochætæ usually disappeared in from twenty-four to forty-eight hours after a dose of 0.6; when they were still demonstrable at the end of twenty-four hours they presented certain signs of degeneration. The cases in which this remedy is contraindicated Spiethoff thinks are comparatively rare; the chief contraindication is a very bad general condition with serious nonspecific organic changes, particularly of the circulatory organs.

4. **Unexpected Result in an Infant after Treatment of the Mother with 606.**—Duhot reports a case in which an injection of 606 into the mother produced a transformation in her nursing infant from a weakly child apparently about to die from hereditary syphilis into a blooming plump child.

5. **Do Special Dangers Attend the Intravenous Injection of 606?**—Ehrlich says that he does not think the intravenous injection as such presents special dangers. He thinks that patients with very far advanced degenerative processes of the central nervous system form a special group which is endangered by the introduction of the preparation and should be excluded from the treatment. In two such cases death has resulted after subcutaneous and intramuscular injections. He thinks that small doses, from 0.3 to 0.5 gramme, may be injected into the veins without hesitation when there is no serious disease of the brain, arteriosclerosis, or functional disturbance of the heart, particularly angina pectoris.

7. **Influence of Powdered Silver Nitrate upon Granulations.**—Baruch recommends a one per cent. powder of silver nitrate as an application to foul wounds, and says that it cleanses them thoroughly and quickly.

AMERICAN JOURNAL OF OBSTETRICS

September, 1910.

1. The Surgical Treatment of Vaginal Delivery, By E. P. Davis.
2. Ectopic Gestation from the Standpoint of the General Practitioner, By G. L. Hunner.
3. The Treatment of Eclampsia, By B. C. Hirst.
4. The Diagnosis and Distinctive Diagnosis of the Pathological Processes Causing Enlargement of the Kidney, By C. G. Cumston.
5. A Method of Anastomotic Repair of the Divided Ureter, By M. McLean.
6. Fibromyoma of the Uterus, By I. S. Stone.
7. Spontaneous Rupture of the Uterus Due to Hydatidiform Mole, By R. Waldo.
8. Deformity of Both Hands Occurring in a Child Delivered from a Mother with Oligohydramnios, By W. H. Wells.
9. Neuromuscular Exercises Done at the Word of Command in the Treatment of Rotary Lateral Curvature of the Spine, By J. J. Nutt.
10. Pericardial Adhesions in Children, By D. L. Schram.
11. Some Observations on the Middle Ear, By C. G. Crane.
12. Infantile Scurvy, By T. S. D. Grasty.
13. Pott's Disease, By R. G. Moore.

1. **The Surgical Treatment of Vaginal Delivery.**—Davis observes that obstetric surgery was the last branch to develop under the modern conditions of antisepsis and asepsis. With its developmen Cæsarean section, symphysiotomy, and pubiotomy became susceptible of the same success which attended the application of surgical principles to other operations. Hæmorrhage and infection are the two enemies which the obstetric surgeon most dreads, and the major obstetric operations are successful according as these evils are avoided and the parturient patient left in cound condition. Vaginal delivery by forceps, version, and extraction, or craniotomy have not been subjected to the same rigid application of surgical principles as have the major operations. Obstetric disasters usually originate in difficult vaginal delivery under imperfect surgical technique. In difficult vaginal deliveries the object should always be to adopt such measures as will lessen and not increase the danger from hæmorrhage and infection. The treatment which is applied in the best maternity hospitals should be the standard by which private cases should be treated, as far as this is possible.

2. **Ectopic Gestation from the Standpoint of the General Practitioner.**—Hunner summarizes his views as follows: 1. The surgeon is in error in teaching that the diagnosis can rarely be made before the tragic stage. 2. The physician to whom the patient first comes should make a presumptive diagnosis, in most cases, from the history alone. 3. The diagnosis having been made before rupture the operation should follow as soon as possible. After rupture arrangements should be made for a rapid, clean operation. It should be done at the patient's home if the distance to a hospital is too great for safe transportation. While waiting for an improvement in the condition morphine should be given, physical exertion prohibited, and stimulants and salt solution used cautiously to prevent elevation of the blood pressure and renewal of hæmorrhage. 4. If there is reasonable doubt as to the existence of ectopic gestation, the patient should be taken to a hospital to await developments. It is better to operate upon a patient unnecessarily than to lose one from hæmorrhage.

3. **The Treatment of Eclampsia.**—Hirst states that the mortality of this condition should be kept below ten per cent.; at present it is greater than that percentage in this country. Most of the victims of eclampsia are primiparæ. A convulsion having occurred it is advised that two ounces of castor oil with a drop or two of croton oil be introduced into the stomach with a stomach pump. To this should be added two drachm doses of concentrated Epsom

salt solution, if the patient can swallow. If possible the patient should be placed in a sweat cabinet, thirty minutes every four hours, in steam heat. After the first sweat a quart of salt solution should be injected under the breasts, and between the sweats the same quantity should be injected into the colon. If the blood pressure is more than 180 sixteen ounces of blood should be withdrawn. Fifteen minims of fluid extract of veratrum viride should be given, hypodermically, and 1/100 grain of nitroglycerin every four hours. Chloral and chloroform are unessential. The membranes should be punctured and accouchement forcé avoided. Spontaneous delivery in eight hours will follow as a rule. Treatment should be continued for a week after the cessation of the convulsions.

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Proceedings of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-eighth Annual Meeting Held in Milwaukee, September 6, 7, 8, and 9, 1910.

The President, Dr. Charles O. Probst, of Columbus O., in the Chair.

(*Continued from page 643.*)

Preventable Neuroses.—Dr. C. H. Hughes, of St. Louis, said that we had heard a good deal of late about the conservation of forests, which had been a subject of national concern, but what he wished to speak about was the prevention of the neuroses which underlay the physical, the moral, and the mental integrity of the people, and which, if not considered and timely regarded, would eventuate in degeneration and degradation of the people, such as had visited the peoples who had gone before. The neuroses constituted the bane of civilization. It was the neglect to care for a neurosis that caused the greatest of human generals to fall. It was an epileptoid condition, which was neglected, that caused Napoleon Bonaparte to lose the battle of Waterloo. They were for prevention of the neuroses, those conditions of mind and of the nerve centres otherwise that had so much to do with the individual in the community, with the individual on the firing line in the battle of life and with the individual who had to meet the duties and obligations of modern civilization, with its strenuous demands; and it was in the prevention of the neuroses, beginning with the cradle and extending up to manhood and through manhood, that we had most to do as physicians who wished to conserve the vitality of the race and save America. We must take care of the neuroses because they were the bane of civilization; they were the bane of the family life; they were the bane of the social life. The incongruities and unhappiness that existed in families and were revealed so largely in the divorce courts were the product on one side or the other, and oftentimes on both, of the dominance of the neuropathic element. They were called incompatibilities by lawyers, who could not find a better term, but they were conditions of neurotic ill adaptability. They were physical misfits. What he meant by the neuroses was not alone functional conditions of the nervous system, because the line of demarcation between functional and organic disease was only a question of time and of study and further observation, but the functional affections of yesterday were the organic troubles of to-day. The time was coming when we should understand hysteria to be an organic disease. Insanity came down in its predisposing element in the majority of instances as an inherent predilection, an inherent organic tendency, and superadded to it came the disturbance or influence of environment, the disturbing influences of depressive passion, the influences of conditions of overstrain, and overworry. We should have a reasonable regard for the powers of the growing child, so that he might not be overstrained. He should have an adequate amount of fresh air, abundant nutrition, and ample time for rest, and the prevention of those conditions which came from excesses was the cardinal principle which underlay the prevention and evolution and final destructive development of all neuroses.

Dr. John N. Hurty, of Indianapolis, asked, What if we did save a child from diphtheria or scarlet fever and yet failed to save it from some neurosis? The child was lost just the same. The longer he lived and worked in the science of hygiene, the more he was convinced that there was no hope in working with the adult. We must go back and instruct the child. That being done, we had taken the first step. Under our present form of education we did not do that except to a limited degree. The thought was gradually penetrating our minds that the child must have playgrounds and fresh air. We had been shutting out the air from the schoolroom and calling it economy. We had been buying sites for schoolhouses without playgrounds, and calling that economy, and it was the worst kind of extravagance. Something must be done to prevent the building of insane asylums, taxing the people, raising the rates, and having insane on every hand, and the way to do that was to begin with the child.

Dr. Henry A. Norden, of Sturgeon Bay, Wis., stated that, aside from trying to make a living in the practice of medicine, he had been riding a hobby—the education of children. Neurotic conditions were superinduced by night studies on the part of children. We should not blame the teachers or the school board, but blame the people who were behind them and prevented the school board from doing what they should do. It was absolutely necessary, considering the way education was carried on to-day, for the child to study at night or to sacrifice the playtime of the day. It was almost impossible for children to study in school with one section of the schoolroom reciting. He had suggested frequently in his work cutting down the number of hours of school sessions; that the school session be used for the recitations and explanations—a part of the day to be used for pleasure and part for study. In that way we could prevent neurotic conditions that were produced by night studies.

Dr. E. C. Rogers, of Faribault, Minn., stated that wherever there was a family with two feebleminded children, that family ought to be studied carefully, its ancestry gone into, and the mental condition of these children studied carefully, and from the work that was now being carried on it was hoped to have data which would give the facts necessary to make statements as to what should be done toward prevention.

The President's Address. — The PRESIDENT stated that a renaissance in health was at hand. Never before had the public shown such interest and enthusiasm in health measures. Never had it so nearly reached a realization of the immense possibilities in preventing sickness and prolonging life. The time was ripe for cooperation of the widest sort. Without attempting even to outline a plan for cooperation, he recommended that by committee or otherwise the question be investigated of the possibility of uniting or concentrating the efforts of the different national organizations in the four countries represented whose work concerned in any large measure the promotion of the public health. If moral prophylaxis came within the scope of social hygiene, the question of providing suitable amusement for the working people became of greatly increased importance. Especially was this true of working girls. The lack of such places in large cities was among the chief causes of the social diseases. The department of child hygiene of the Russell Sage Foundation, established in 1908, occupied a part of this field. Its purpose in part was to conduct researches and promote activities favorable to the physical, moral, and intellectual welfare of children, especially public recreation, and the health and progress of school children. This association stood for the highest possible standards in public health. In various ways it had given weighty support to many movements for improving general health conditions, and notably in the interest of pure food and the establishment of a national health department. The family physician must long remain the chief instructor and most potent factor in preventing the spread of dangerous infectious diseases. The strongest nation, the one of greatest achievements, would in the end be the one that gave the greatest amount of intelligent care to the health of its people. Eventually all health interests should be administered by the government. If the first step toward the centralization, or at least the cooperation, of the many associations devoted to health problems could be taken at the meeting, it might be the means of hastening the day when every individual would be given time and opportunity for the pursuit of health and happiness and the certain knowledge of how and where to find them.

Organization of the Pennsylvania State Department of Health.—Dr. SAMUEL G. DIXON, of Harrisburg, said that from July 22, 1907, to June 30, 1910, 32,347 poor tuberculous sufferers had received the skilled medical aid and the attention of trained nurses which the Department's 115 dispensaries provided. The death rate from tuberculosis in Pennsylvania had fallen from 134 to 120 per one hundred thousand of population in four years. This meant a saving of 1,000 lives annually. From October, 1905, when the State began its free distribution of diphtheria antitoxine among the poor, down to December 3, 1909, 20,794 cases of this dread disease, mostly in little children, were treated with the life saving serum. We knew by statistics that without antitoxine forty-two out of every one hundred of these children would probably have died, but with the aid of the State's antitoxine the death rate among these poor little sufferers was reduced to 8.48. Free antitoxine was also given in 15,125 cases, mostly those of children who had been in contact with the disease. All but a very few of these were absolutely protected against diphtheria. A very low estimate of the saving of child life resulting from the State's free distribution of diphtheria antitoxine since 1905 was about 8,000 lives, a pretty good investment of the taxpayer's money. And what of typhoid fever in view of all this work for pure water? In 1906, 56.5 out of every 100,000 people died from this disease; in 1907, 50.3; in 1908, 34.4; and in 1909, 23.9. That is, there were now living 2,363 people who, had the death rate of 1906 prevailed in 1909, would have died from typhoid. In 1906 and 1907 the death rate in Pennsylvania per 1,000 of population was 16.5; in 1908, it had dropped to 15.7 and in 1909 to 15.3.

Report of the Committee on Education of the Public as to the Communicability and Prevention of Gonorrhœa and Syphilis.—This report was presented by the chairman, Dr. GEORGE M. KOBER, of Washington, D. C. The report contained several recommendations, which were referred to the Executive Committee for consideration, and which were reported back to the general meeting subsequently in the following amended form: The committee recommended: "1. The recognition, study, and control of the prevalence of these, as with all other communicable preventable diseases in order to ascertain the distribution of them. 2. An educational campaign for parents of all social classes and children of all ages and sexes. This teaching should be not only moral, but also medical in the widest sense. (*a*) Proper distribution of circulars, pamphlets, and other literature by State health departments through all suitable channels. (*b*) State health departments to instruct all their local health officers in sexual matters, and direct them to make a systematic effort to educate the people in their respective communities. (*c*) State health departments to make a definite and determined effort to awaken and interest the medical profession in this fight against venereal diseases. (*d*) State health departments to send out specially trained paid teachers and lecturers of their own, supported by exhibits and lantern slides, to address special meetings of parents, health officers, medical men, teachers, and others in schools, colleges, churches, etc., on these and other preventable diseases. (*e*) State health departments to encourage the organization of local leagues or associations whose purpose shall be the support of and control of a crusade against the spread of all communicable diseases. Said societies to include every profession and walk of life; to depend on philanthropists for necessary funds rather than upon paid subscriptions for financial support. (*f*) Health departments to interest and provide for the authorities having charge of the educational curriculum in public and in private schools. (1) By the introduction of biology into the graded courses of all schools. (2) To provide instruction in sexual matters for students of the upper grades. (3) By special instruction to normal school students who are to become the instructors. To impress upon presidents, deans, preceptors, and teachers the necessity of exercising their influence on students in reference to the communicability of syphilis and gonorrhœa, and to inculcate a morale of protection among the college fraternities. (*g*) To utilize the public press for the proper occasional presentation of the subject, and to discourage the display of advertising matter which encourages the exposure to dangers in these diseases. (*h*) To utilize church clubs, fraternal societies, trade unions, women's clubs, and especially mothers' clubs for instruction of parents. (*i*) Health departments to recommend the enactment of laws for: 1, Physical inspection and segregation of prostitutes. 2. Notification and report (by number, if desired) of venereal cases. 3. Physical examination of men before marriage, male applicants for the marriage license being required to submit to an examination by a duly qualified physician for the purpose of ascertaining whether said applicants are free from venereal diseases. 4. To make it a crime to spread any venereal disease. 5. By keeping open free night dispensaries and maintenance of special dispensaries and hospitals for these diseases. Advocacy of temperance on account of the relationship between alcoholism and venereal diseases. (*k*) Advocacy of personal cleanliness and venereal prophylaxis. (*l*) Advocacy of early marriage." These recommendations were adopted.

Venereal Diseases among Seamen of the Merchant Marine.—Dr. J. W. Kerr, of Washington, D. C., read a statistical paper on this subject.

Dr. J. R. Kean, of Washington, D. C., made a plea for applying the usual methods of preventive medicine to venereal diseases, and, among other things, said that he did not think it was either wise or necessary for scientific men interested in the good of the race and of the country to take any part in the discussion of the relation of this evil to society. It was sufficient for them to know the following facts, that the prostitute was a present confrontation of the problem. There was no reason to think that these diseases were beyond the reach of preventive medicine any more than other contagious diseases, and their immunity from restriction must be attributed to the public disinclination to discuss them and legislate concerning them. He hoped that this association would not be deterred by the outcry of certain classes of persons who were accustomed to think with their emotions rather than their brains from taking the bold stand in this matter which was justified by science, by common sense, and by the demands of the public good.

A Consideration of Venereal Prophylaxis in the U. S. Navy for the Benefit of Public Health Officials.—Dr. Charles N. Fiske, of Washington, D. C., stated that about fifty per cent. of the enlisted men of the navy had a venereal disease in the course of an average of four years. During 1908 there were 4,681 original venereal infections, which entailed a loss of service and expense for treatment of 106,526 sick days; there were 1,001 cases of syphilis, which represented nearly seven per cent. of the total disability of the navy for that year.

While the morale had steadily and vastly improved during the past ten years in other respects, the damage resulting from this class of affections had assumed such proportion four years ago that numerous medical officers no longer felt justified in waiting indefinitely for moral regeneration; they felt that military efficiency demanded activities promising more immediate results; they instituted personal prophylaxis by the use of antiseptic irrigations and inunctions following exposure and upon return to the ship or stations. Certain results achieved caused the department nearly two years ago to authorize the extension of this work in connection with the customary educational propaganda and the distribution of confidential circulars throughout the service.

Venereal disease had by no means yet been conquered in the navy, but there was evidence that its ravages were being materially lessened, and that instead of encouraging vice through the hope of immunity, the margin of failure of this prophylaxis was sufficiently wide to deter an increasing proportion of the men from sexual indulgence. The desire for clean men on clean ships had been stimulated, and no sense of security had been engendered.

Dr. Gardner T. Swarts, of Providence, R. I., stated that last year, as president of this association, he took the liberty of appointing a committee to take up the subject of venereal prophylaxis, with the idea that the people of the country were prepared to receive instruction in these matters. These communicable diseases were preventable, and if boards of health were to conserve the public health, then these diseases should be put on the reportable list and steps taken to prevent their prevalance as far as possible.

Dr. J. S. Neff, of Philadelphia, did not think it was possible to compel physicians to reveal the existence of these diseases among their patients, and they would not report this class of cases to health departments.

Dr. John N. Hurty, of Indianapolis, believed that the road leading to the prevention of venereal diseases was the longest and roughest which hygiene and sanitary science had to travel. At this time every tribe, every nation, every people of the earth were thoroughly syphilized. And now we were proposing to eradicate it. The first man to propose education to eradicate these diseases was Solomon, and he began five thousand years ago, and with education, such as he gave, and such as we proposed to give, these diseases had increased and multiplied. Until we put aside that prudery which now prevented us from attacking this problem correctly and from teaching the child about his sexual nature and about procreation, we could make no progress. Let us begin with the child.

(*To be concluded.*)

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless so far as space permits, we review those in which we think our readers are likely to be interested.*]

Die Erkrankungen der Flexura sigmoidea. Von Prof. Dr. Th. Rosenheim, Berlin. Halle a.S.: Carl Marhold. 1910. Pp. 78.

It is well known that as the sigmoid flexure is the most movable part of the colon, its topography is therefore very changeable: furthermore, it has the best developed musculature of the colon; and.

finally, as it is the narrowest part in the colon, the passage of the fæces through it is very slow. The work performed by the sigmoid in digestion, when compared with the other parts of the intestinal canal, is very limited; the fæces are condensed and formed, that is, the sigmoid prepares the fæces and regulates defæcation. It is therefore only natural that this part of the colon has been the subject of an interesting booklet. Its study will be of interest, although it is mostly based upon German literature.

The Religio-Medical Masquerade. A Complete Exposure of Christian Science. By FREDERICK W. PEABODY, LL. B., of the Boston Bar. Boston: The Hancock Press, 1910. Pp. 197. (Price, $1.)

The author claims an unusually intimate knowledge with the squalid history of Christian Science, because of repeated professional employments in which it was his duty to get at the actual facts with the aid of legal process. He particularizes the suits he was engaged in, challenges Mrs. Mary Baker Glover Eddy and her associates in her religio-medical-commercial system to prosecute him for libel in the publication of this book, and affirms that their omission to do so is an acknowledgment of the truth of every statement he makes. He likens Eddyocy to the cult of Joanna Southcote, of whom Macaulay wrote: "We have seen an old woman with no talents beyond the cunning of a fortune teller, and with the education of a scullion, exalted into a prophetess and surrounded by tens of thousands of devoted followers, many of whom were, in station and in knowledge, immeasurably her superiors, and all this in the nineteenth century, and all this in London." How the last sentence could be paraphrased and applied to the country where Mormonism, Spiritualism, Schlatterism, and Dowieism have had their vogue! The tone of the book is sometimes vehement, but it is an authoritative account of this astounding, audacious, and impious cult.

Die Syphilisbehandlung mit dem Ehrlich-Hata'schen Mittel (Dioxydiamidoarsenobenzol). Zusammenstellung der bisherigen Erfahrungen. Von Dr. JOHANNES BRESLER, Oberarzt an der Prov. Heil- und Pflegeanstalt zu Lüben i. Schl. Zweite, bedeutend vermehrte Auflage. Halle a.S.: Carl Marhold, 1910. Pp. 65.

As we stated in our review of the first edition (see *New York Medical Journal*, September 3, 1910, p. 497) it is a very timely pamphlet. The author has added the reports that have appeared up to August 16th: that is, to the thirty pages which are reprinted without a very needed revision, as we pointed out at that time, of the first edition, thirty-five new pages have been added.

Practical Suggestions in Borderland Surgery. For the Use of Students and Practitioners. By GUSTAVUS M BLECH, M. D., Professor of Clinical Surgery, Medical Department Loyola University, Chicago, etc. Philadelphia Publishing Company, 1910. Pp. 219. (Price, $1.50.)

The author states that the purpose of this volume is to make an appeal for sane and rational surgery in that class of affections commonly designated as borderland diseases. It would seem that the author has undertaken too much for a work of such small compass, though the advice he gives is sometimes good. All will agree that "a gastrectomy should not be undertaken by an occasional operator," though we do not agree that "unless one is absolutely devoid of anatomical knowledge and ability to wield scalpel and needle, he should be able to do the operation (Routte's for cirrhosis of the liver) in about fifteen minutes." It is not clear how the novice is helped by advice to follow Mayo's technique in operating for umbilical hernia when that technique is not described. The book promises a greater knowledge of surgery and more experience and judgment than the class to whom it is addressed is likely to possess.

The Medicochirurgical Series, No. 2. The Stomach, Intestines and Pancreas. By W. C. BOSANQUET, M. A., M. D. Oxon., F. R. C. P., Assistant Physician to Charing Cross Hospital and to the Brompton Hospital, and H. S. CLOGG, M. S. Lond., F. R. C. S. Eng., Assistant Surgeon, Charing Cross Hospital, Senior Surgeon to the Evelina Hospital for Children, etc. Edited by JAMES CANTLIE, M. A., M. B., C. M. Aberd., F. R. C. S. Eng., Surgeon to Seamen's Hospital Society, etc. New York: William Wood & Co., 1910. Pp. vii-665. (Price, $4.)

The aim of the editor of this series has been to have the conjoined authorship of a physician and a surgeon, so that the text may embody those things that are salient features to each. This volume opens with a description of the surgical anatomy of the organs concerned and the methods of examination. The Gunsberg test may be made like the tropæolin test, with a porcelain saucer instead of a water bath; and in the examination of fæces the directions are too meagre and should be more explicit.

The second section of the book treats of disorders of the stomach with a brevity that may at times be unsatisfactory to the reader, as in the matter of diet. The third section presents intestinal disorders. Considering the important influence of constipation in the causation of many disorders, some more extended notice might have been given to it. The final section of the volume, on diseases of the pancreas, is rather meagre, though all important points are mentioned.

An International System of Ophthalmic Practice. Edited by WALTER L. PYLE, A. M., M. D., Philadelphia, Member of the American Ophthalmological Society. Therapeutics. By Dr. A. DARIER, Paris. Translated by SYDNEY STEPHENSON, M. B., F. R. C. S., London, Late Honorary Secretary of the Ophthalmological Society. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xiv-444. (Price, $4.)

This book may be briefly described as a well written, concise digest of the remedies now used in ophthalmic practice, in which more space is given to the newer and less to the older methods of therapeutics, and in which operative treatment holds a position subordinate to nonoperative, as naturally would be expected from its general scope. The contents are divided into two nearly equal parts, the first, General Therapeutics, being devoted to a study of the remedies themselves, the second, Special Therapeutics, to the local application of these remedies. The first chapter is devoted to the modern precise methods of diagnosis: it does not purport to be full, but among other things it includes a good description of the demonstration of the spirochæta, of the diagnostic use of tuberculin, and of Wassermann's reaction. The importance of constitutional treatment associated with local in the management of diseases of the eye is emphasized.

Arteriosclerosis, syphilis, lymphatism, and scrofula are dealt with at considerable length as the underlying causes of certain ocular conditions, while less space is given to anæmia, diabetes, and albuminuria, the eye complications of which have long been recognized. The administration of drugs by inunction and by hypodermic, intravenous, rhachidian, and epidural injection occupies a chapter. Under arsenical preparations atoxyl and arsacetin are described, but the book was issued too soon to permit of mention of the 606 with which Ehrlich has replaced these preparations. The rationale, indications, contraindications, effects, and technique of subconjunctival injections are given in detail. Serum therapy receives much attention. "The ideal method of treatment would be to oppose each infective disease with a specific serum," but, as at present we possess few specific serums, the use of such as we have in more or less related diseases is discussed under the term "paraspecific serotherapy." The use of the x rays to locate foreign bodies is dismissed in a few words, and their use in disease in less than two pages, while over six pages are devoted to the use of radium. The dissertation on the indications for, the technique of, and the benefits to be obtained from the application of the various forms of massage to the eye is very instructive. Medication with anæsthetics, analgetics, vasodilators, vasoconstrictors, mydriatics, cycloplegics, meiotics, and drugs that modify the conjunctival secretions fills over sixty pages.

Under the heading Special Therapeutics is considered the application of remedies to diseases of the orbit, the lacrimal apparatus, the lids, and the various structures of the eye in turn. Few points of adverse criticism can be made, aside from the fact that many conditions are dismissed with very few words, but it seems strange that, as both abscess of the orbit and affections of the accessory sinuses are mentioned, no reference is made to the frequent dependence of the former on the latter. From the way in which they are spoken of the uninformed reader might judge them to be essentially distinct. The judicious selection of a few subjects for commendation presents more difficulty. During an operation for chalazion it should be borne in mind that it is an infective and contagious granuloma, and care should be taken not to open its envelope, lest the infection be disseminated in the neighboring tissues. The chapters on diseases of the conjunctiva, cornea, and iris are excellent. The treatment recommended for chronic iridochorioiditis is quite properly called "desperate," but the disease is one that calls for desperate remedies. The chapter on diseases of the lens, chiefly cataract, is very good indeed, though no mention is made of extraction in the capsule. It is stated that favorable results have been obtained in twenty-five per cent. of the cases of central chorioiditis treated with subconjunctival injections, though the respective values of the components of the injections have not yet been ascertained, and it is stated that failures have been due hitherto to a lack of knowing how to proportion doses to the intensity of the morbid process. If this is correct, this form of treatment of an obscure and obstinate affection deserves much more attention than it has received in the past. An excellent index is appended to the work.

Essentials of Medical Electricity and Radiography. By EDWARD REGINALD MORTON, M. D., C. M. (Toronto), F. R. C. S. (Edin.), Vice-President, Electrotherapeutical Section, Royal Society of Medicine, etc. Second Edition, Revised and Enlarged. With Eleven Plates and 129 Illustrations. Chicago: Chicago Medical Book Company, 1910. Pp. xvi-349.

The author has amplified in this new edition the results of his extensive experience in two London hospitals, and one is impressed by the conservative tone he adopts, for he does not seek to prove that electricity is a panacea, but to indicate those conditions in which this agent can be of therapeutic value. The first principles of electrology, the sources of supply, medical batteries, and accessories are described, then consideration is given to the physiological action of the current, its use in diagnosis and surgery, and its general and special therapeutics. A third of the book is devoted to radiography. It will prove a useful manual to students and physicians.

The Ear and Its Diseases. By ALBERT A. GRAY, M. D., Laureate of the Lenval Prize in Otology, International Medical Congress, 1909, Fellow of the Royal Society of Edinburgh, etc. With Stereoscope and 123 Illustrations, of which 37 are Stereoscopic. New York: William Wood & Co., 1910. Pp. xii-386. (Price, $4.25.)

This work has been prepared for the student as well as the practitioner, as indicated by the opening chapter, a most concise and instructive one, on acoustics. Brevity and clearness characterize the whole book, which is astonishingly complete, considering its size. The stereoscopic illustrations are interesting to one familiar with the anatomy of the ear, but diagrammatic representations would have been more valuable to the student. This applies as well to the numerous photomicrographs showing pathological changes and minute histology. There is a lack of large "maps and charts" of the ear and mastoid region and of cuts of instruments and apparatus, and there is some disproportion in the brief summary of the mastoid operation and the account of intracranial complications of otitic disease as compared with the rather elaborate presentation of affections of the labyrinth and auditory nerve. Further detail in regard to routine examination and the commoner surgery of the ear would have made this book more valuable for the beginner.

MEDICOLITERARY NOTES.

In one of David Graham Phillips's always strong and interesting novels, *The Second Generation,* the high financier, Whitney, gets medical advice from six specialists, differing in each case as he consults them one after another instead of together. Finally he makes up his mind to see the old family practitioner of his birthplace, a small town. "I am going to see old Schulze," he says; "Schulze knows more than any of 'em, and ain't afraid to say when he don't know. That's why he is unknown. What can a wise man, who insists on showing that he's wise, expect in a world of damn fools?"

* * *

Such is the view of an unusually clever layman. Practitioners of transcendent ability, however, who are unrecognized must be very scarce. It is a familiar gibe at successful city men to say that their sole title to success lies in their tact and *savoir* *faire,* but there are too many emergencies arising in the most commonplace practice that demand instant and scientific handling to allow of an incompetent remaining long unexposed. On the other hand, there are several rough diamonds who save valuable time by the exercise of apparent boorishness in the treatment of their enormous clientèles. Roughness of demeanor is often as much a pose as suave sympathy.

* * *

Collier's for August 27th reports that women graduates of the Colorado State Agricultural College must be able to make a complete infant's layette before receiving the diploma in household economics. Some day our children will be clothed till their fifth year or later in a simple loin cloth. This garment will be required to carry the pockets without which no boy could be happy. Parents who overdress children, being sometimes insensible to appeals based on hygiene and common sense, should be brutally told that the practice is vulgar and not indulged in by the "best people."

* * *

Scribner's for September has, among other entertaining material, a story by Edith Wharton, The Blond Beast, in which we have noted a most curious simile. Draper Spence's "features were tightened by a smile that was like the ligature of a wound." Not only is a ligature an unusual appliance for a wound, but we have never noticed anything about the many kinds of bandages and dressings that in the faintest degree recalled the look of a smile.

* * *

The Microbe as a Social Reformer is the title of a paper by Robert W. Bruere in the September *Harper's.* It shows how modern theories of disease have proved the necessity of trying to stamp it out among the poor. Antivivisectionists will read the article with unseeing eyes, although the crusade for pure air and clean food is the direct outcome of experimental physiology. Florence Nightingale, fine character as she was, was carried away by her success in nursing to the extent of voicing her unfavorable opinion of modern bacteriological theories when they were scarcely more than timid hypotheses. Needless to say, her opinions have been carefully treasured up and are cited to this day to confound us. In Florence Nightingale's day the occurrence of an epidemic was the act of a Deity offended by sin. As far as disease is concerned, ignorance is the unforgiven sin, always relentlessly punished.

* * *

The observant reader of newspaper advertisements will notice a frequent demand by large establishments for "clean cut young men." We doubt if the supply of young men of this kind equals the demand, for they come almost exclusively from the Orient, principally from China, where they are largely employed in domestic service about the harem. It is to be hoped that the struggle for a living is not reducing our people to low Eastern standards of ambition, and that fidelity to an employer can be guaranteed in other ways than by a mere certificate of assured celibacy.

NEW PUBLICATIONS.

Minot, Charles Sedgwick.—A Laboratory Textbook of Embryology. Second Edition, Revised. With Two Hundred and Sixty-two Illustrations, Chiefly Original. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xii-402. (Price, $3.50.)

Knopf, S. Adolphus.—Tuberculosis. A Preventable and Curable Disease. Modern Methods for the Solution of the Tuberculosis Problem. Second Edition. New York: Moffat, Yard, & Co., 1910. Pp. xlii-394. (Price, $2.)

Gray, Henry.—Anatomy. Descriptive and Applied. Eighteenth Edition. Thoroughly Revised and Reedited with Additions by Edward Anthony Spitzka, M. D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Illustrated with 1,208 Engravings. Philadelphia and New York: Lea & Febiger, 1910. Pp. xxiv-1496. (Price, $6.)

Herman, G. Ernest.—Difficult Labor. A Guide to Its Management for Students and Practitioners. With One Hundred and Eighty Illustrations. New and Enlarged Edition, with Added Chapters on Retroversion of the Gravid Uterus and Puerperal Eclampsia. New York: William Wood & Co., 1910. Pp. xii-547. (Price, $2.50.)

Tweedy, E. Hastings, and Wrench, G. T.—Practical Obstetrics. Second Edition. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xx-491.

Mummery, P. Lockhart.—Diseases of the Colon and Their Surgical Treatment. Founded on the Jacksonian Essay for 1909. Illustrated by Colored and Other Plates, and Numerous Figures in the Text, Many of Which are Reproduced from the Author's Sketches. New York: William Wood & Co., 1910. Pp. vi-322. (Price, $3.25.)

Hassard, Major E. M., and Hassard, A. R.—Practical Nursing. For Male Nurses in the R. A. M. C. and Other Forces. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xiii-339.

Rumpel, O.—Cystoscopy as Adjuvant in Surgery. With an Atlas of Cystoscopic Views and Concomitant Text for Physicians and Students. Only Authorized English Translation by P. W. Shedd, M. D., New York. With Eighty-five Illustrations in Color on Thirty-six Plates, and Twenty-two Textual Figures. New York: Rebman Company. 1910. Pp. vi-131. (Price, $8.50.)

Egbert, Seneca.—A Manual of Hygiene and Sanitation. Fifth Edition, Enlarged and Thoroughly Revised. Illustrated with Ninety-seven Engravings. Philadelphia and New York: Lea & Febiger, 1910. Pp. 508. (Price, $2.25.)

Schittenhelm, A., and Schmid, J.—Die Gicht und ihre diätetische Therapie. Halle a.S.: Carl Marhold, 1910. Pp. 38.

King, A. F. A.—A Manual of Obstetrics. Eleventh Edition, Revised and Enlarged. With Three Hundred and Forty-one Illustrations in the Text and Three Plates. Philadelphia and New York: Lea & Febiger, 1910. Pp. xxi-713. (Price, $2.75.)

Miscellany.

The Cholera Outbreak in Italy.—According to a report sent to the Public Health and Marine Hospital Service by Surgeon H. D. Geddings, who is stationed at Naples, the announcement of the presence of cholera in Italy August 17th came as a complete surprise. The report says:

> There had been no disturbing rumors, although the cholera situation in the Black Sea provinces of Russia had become disquieting and had led to renewed precautions in the handling of emigrants destined for the United States. On August 18th a circular letter was addressed by this office to all steamship agencies in Naples announcing the enforcement of the quarantine regulations of the United States in regard to cholera. During the afternoon of August 17th and the morning of August 18th about eighty passengers of the steerage class were placed under observation in a special boarding house designated by the Italian inspector of emigration at this port.

Origin of the infection.—Reliable information gives the cause of the outbreak as the debarkation at Brindisi of a party of Russian gypsies from Batum, who proceeded by rail to Trani, which is to be regarded as the primary focus of the epidemic. Whether any of the wanderers were ill upon arrival admits of doubt; but it is certain that arriving in Trani they washed clothing in vessels used for drawing water from a well, and in due course there followed cases of choleriform disease, the nature of which was not immediately recognized, and which were regarded by the authorities as "grave gastrointestinal disturbances." The infection spread to various towns and cities in the provinces of Bari and Foggia, both in the region of Apulia. The town of Trani has up to this time suffered most severely, and it is to be regarded as the primary focus of infection, the outbreak partaking of the characteristics of a water borne epidemic. The infection at other points is secondary, and the nature of the spread up to this time points to "contact" outbreaks.

Extent of the infection.—To this time the disease has made its appearance in the following places: In the province of Bari, at Andria, Trani, Corato, Bitonto, Spinazzola, Barletta, Bari, and Bisceglie. In the province of Foggia, at Cerignola, Trinitapoli, San Ferdinando di Puglia, and Margherita di Savoia. The province of Lecce at this date remains free from infection, and it is to be remembered that these three provinces compose the region or district of Apulia.

Measures taken by the authorities.—Inspectors and commissioners were promptly sent from the central sanitary office at Rome to the infected district and the measures taken by them have been thorough and seem to have had good results. The situation to-day is considerably improved. Travel in the infected district is being restricted and regulated; towns are being cleaned and put in better sanitary condition, and arrangements have been made for the distribution of drinking water from the aqueduct of Ofanto, a source of great purity. . . . Prohibitions have already been put in force as to the sale of fruits, especially melons, tomatoes, cucumbers, and other articles of food, such as snails, oysters, and mussels. The exportation of fruits, vegetables, etc., from the infected districts has also been prohibited. Hospitals have been organized in all towns, and large quantities of disinfectants have been distributed, while all doubtful wells have been closed, and all suspected cisterns have been ordered cleaned and refilled with the pure water mentioned above. Special precautions have also been taken at all the ports which have Russian connections.

Conditions in Naples.—Naturally there is some uneasiness in Naples, and the sanitary authorities have been spurred to great activity. With the careful regulation of railroad travel much of the risk to Naples will be removed. The water supply of the city is such, and its source is so removed from all human habitation, and so carefully policed and guarded, that a water borne epidemic of cholera is, humanly speaking, impossible. But should cases be introduced into the lower quarters of the city, there would undoubtedly be contact epidemics or at least outbreaks. Sanitary matters are receiving the careful consideration of the proper authorities, and there is no sense of false security with its attendant danger.

The relation of the outbreak to emigration.— . . . The Italian commissioner general of emigration came at once to Naples, and with him and the representatives of the various steamship companies arrangements have been completed as follows:

I. Pending the inauguration of measures to be hereafter detailed the movement of emigration from the infected provinces to Naples by rail will be prohibited.

II. As soon as the necessary arrangements can be made, all would be emigrants from the infected provinces will be collected in a clean town, under proper sanitary regulations, and brought to Naples on special trains, which trains will be under the supervision of military medical officers, and the trains will be equipped with all necessary emergency supplies and provided with a sufficient force of military hospital stewards and nurses.

III. Arriving in Naples, the emigrants will be carried from a special station, on special tenders or lighters, to a hospital or receiving ship which will be moored off the end of the mole. This ship will be capable of receiving 400 or more emigrants, will have some bathing facilities, a sulphur furnace, facilities for the disinfection of the clothing in which the emigrants arrive, special arrangements for the disinfection of all excreta prior to discharge into the waters of the bay, a clinical laboratory for diagnostic use, and in addition to the regular complement will have on duty a naval medical officer and a force of naval stewards and nurses, and to this ship Acting Assistant Surgeon Buonocore and I will have access at all times. Under these conditions the emigrants will be detained five full days, and then brought to the regular place of embarkation for the medical examination. The present shore facilities for the disinfection of personal effects are ample and are under our control. Should any case of cholera make its appearance on the receiving ship, the ship, with all on board. will at once put to sea and repair to the quarantine station on the Island of Sardinia and her place will be taken by another ship. The vessel will be ready for the reception of passengers August 29th.—*Bulletin of the Public Health and Marine Hospital Service.*

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending September 23, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Batangas	July 24-Aug. 6	62	31
Philippine Islands—Bulacan	July 24-Aug. 6	194	138
Philippine Islands—Cavite	July 24-30	2	2
Philippine Islands—Manila	July 24-Aug. 6	35	27
Philippine Islands—Mountain Province	July 24-30	1	1
Philippine Islands—Nueva Ecija	July 24-Aug. 6	129	88
Philippine Islands—Pampanga	July 24-Aug. 6	85	74
Philippine Islands—Pangasinan	July 24-Aug. 6	689	522
Philippine Islands—Rizal	July 24-Aug. 6	75	51
Philippine Islands—Tarlac	July 24-Aug. 6	30	18
Philippine Islands—Union	July 24-30	1	
Cholera—Foreign.			
China—Amoy	Aug. 7-13	3	3
China—Hankow	Aug. 7-13	2	1
India—Bombay	Aug. 10-16		4
India—Calcutta	July 24-30		9
India—Madras	Aug. 6-12		3
India—Negapatam	July 16-29		31
Japan—Osaka	Aug. 6-13	1	
Japan—Yokahama	Aug. 22	1	
Java—Batavia	Aug. 1-6	20	15
Russia—General	Aug. 1-13	44,771	19,473
Russia—Astrakhan, government	Aug. 1-13	604	273
Russia—Don, territory	Aug. 1-13	6,802	3.020
Russia—Kaluga, government	Aug. 1-6	13	3
Russia—Kharkov, government	Aug. 1-6	450	191
Russia—Khazan, government	Aug. 1-13	1,176	484
Russia—Kherzon, government	Aug. 7-13	916	352
Russia—Kief, government	Aug. 1-13	425	125
Russia—Kostroma, government	Aug. 1-13	1,406	587
Russia—Kuban, territory	Aug. 1-13	4,067	2,170
Russia—Kursk, government	Aug. 1-13	1,618	413
Russia—Livonia, government, Riga	Aug. 1-6	1	
Russia—Minsk, government	Aug. 1-13	210	66
Russia—Mohilev, government	Aug. 1-13	67	27
Russia—Moscow, government	Aug. 1-13	23	16
Russia—Nizhninovgorod, government	Aug. 1-13	847	338
Russia—Novgorod	Aug. 1-13	148	59
Russia—Odessa	Aug. 14-20	26	26
Russia—Orel, government	Aug. 1-13	200	72
Russia—Orenburg, government	Aug. 1-13	466	251
Russia—Pensa, government	Aug. 1-13	306	103
Russia—Podolia, government	Aug. 1-13	219	78
Russia—Poltava, government	Aug. 1-13	798	349
Russia—Rjasan, government	Aug. 1-13	788	305
Russia—St. Petersburg, government	Aug. 1-13	157	53
Russia—St. Petersburg	Aug. 1-13	1,115	389
Russia—Samara, government	Aug. 1-13	3,532	1.466
Russia—Saratov, government	Aug. 1-13	1.260	404
Russia—Simbirsk, government	Aug. 1-13	815	332
Russia—Smolensk, government	Aug. 1-13	14	8
Russia—Stavropol, government	Aug. 1-13	1,298	603
Russia—Tambov, government	Aug. 1-13	1,253	562
Russia—Tchernigov, government	Aug. 1-13	183	63
Russia—Ufa	Aug. 1-13	346	200
Russia—Viatka, government	Aug. 1-13	123	64
Russia—Voronesch, government	Aug. 1-13	934	416
Russia—Yaroslav, government	Aug. 1-13	473	229
Russia—Yekaterinislav, government	Aug. 1-13	4.244	1,794
Straits Settlements—Singapore	July 24-30	17	12
Yellow Fever—Foreign.			
Brazil—Manaos	Aug. 14-20	4	4
Brazil—Para	Aug. 21-27	16	11
Brazil—Pernambuco	May 16-21		1
Ecuador—Guayaquil	Aug. 1-15	9	1

Place.	Date.	Cases.	Deaths.
Plague—Foreign.			
Brazil—Pernambuco	June 16-30		1
Chile—Iquique	Aug. 1-6	1	
China—Canton	Aug. 1-6	5	4
China—Hongkong	July 24-Aug. 6	4	4
Ecuador—Guayaquil	Aug. 1-15	10	3
India—Bombay	Aug. 10-16		26
India—Calcutta	July 24-30		11
India—Rangoon	Aug. 1-6		14
Peru—Arequipa, department Mollendo	Aug. 12	1	
Peru—Callao, department	June 28		Present
Peru—Lambayeque	July 1-31	15	10
Peru—Libertad, department	July 1-31	23	19
Peru—Lima, department	July 1-31	5	3
Russia—Odessa	Aug. 14-20	20	3
Russia—Odessa	July 23-Sept. 1	76	18
Turkey in Asia—Basra	Aug. 6-13	4	3
Smallpox—United States.			
Alabama—Mobile	Sept. 4-10	1	
Connecticut—General	Aug. 1-31	..	..
District of Columbia	Sept. 4-10	1	
Louisiana—New Orleans	Sept. 4-10	2	
Michigan—General	Aug. 1-31	56	
New York—General	July 1-31	9	1
Ohio—Franklin County	Aug. 1-31	1	
Ohio—Lucas County	Aug. 1-31	2	
Ohio—Ross County	Aug. 1-31	1	
Wisconsin—Ashland County	Aug. 1-31	1	
Wisconsin—Milwaukee County	Aug. 1-31	6	
Wisconsin—Polk County	Aug. 1-31	1	
Wisconsin—Waupaca County	Aug. 1-31	2	
Smallpox—Foreign.			
Brazil—Pernambuco	May 16-June 30		128
Canada—Victoria	Aug. 27-Sept. 3	1	
Chile—Valparaiso	Aug. 7-13	50	
China—Hongkong	July 24-30	1	1
Ceylon—Colombo	July 24-30		1
France—Paris	Aug. 21-27	1	
India—Bombay	Aug. 10-16		2
India—Madras	Aug. 6-12		4
India—Rangoon	Aug. 1-6		1
Portugal—Lisbon	Aug. 21-27	40	
Russia—Libau	Aug. 15-28	17	
Russia—Riga	Aug. 6-13	28	
Russia—Riga	Aug. 20-27	27	
Russia—St. Petersburg	Aug. 7-13	11	6
Russia—Warsaw	June 5-18		11
Spain—Barcelona	Aug. 22-28		2
Straits Settlements—Penang	July 24-30		2
Straits Settlements—Singapore	July 24-30	9	1
Switzerland—Zurich, Canton	Aug. 21-27	1	
Turkey—Constantinople	Aug. 22-28		1

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers in the United States Public Health and Marine Hospital Service for the seven days ending September 21, 1910:

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., upon special temporary duty.

BECK, J. E., Pharmacist. Granted thirty days' leave of absence from September 15, 1910.

BELL, J. M., Pharmacist. Relieved from duty at Chicago, Illinois, and directed to proceed to Savannah (Quarantine), Ga., and report to the medical officer in command for duty and assignment to quarters.

CURLEY, C. P., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from September 22, 1910.

FRANCIS, EDWARD, Passed Assistant Surgeon. Directed to proceed to Philadelphia, Pa., New York, N. Y., and Detroit, Mich., upon special temporary duty.

GASSAWAY, JAMES M., Surgeon. Granted one month's leave of absence from September 7, 1910, on account of sickness.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Granted one month's leave of absence from September 26, 1910.

MCCOY, GEORGE W., Passed Assistant Surgeon. Directed to proced to Berkeley, Cal., upon special temporary duty.

MCINTOSH, W. P., Surgeon. Granted seven days' leave of absence from September 23, 1910.

MAGUIRE, E. S., Pharmacist. Leave of absence for thirty days from August 6, 1910, amended to read twenty days' leave of absence from August 6, 1910.

PARKER, H. B., Passed Assistant Surgeon. Granted three days' leave of absence from August 25, 1910, on account of sickness.

RUCKER, WILLIAM C., Passed Assistant Surgeon. Leave of absence for one year without pay from June 4, 1910, amended to read from June 4, to September 14, 1910, without pay; granted ten days' leave of absence from September 14, 1910.

SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Directed to report at Bureau upon special temporary duty.

STANTON, J. G., Acting Assistant Surgeon. Granted twenty-six days' leave of absence from September 21, 1910.

STUMP, F. A., Pharmacist. Directed to proceed to Honolulu, Hawaii, and report to the Chief Quarantine Officer for duty.

WARREN, B. S., Passed Assistant Surgeon. Detailed to represent the Service at the meeting of the State Health Officers, to be held in Waterloo, Iowa, September 20, 1910.

WHITE, J. H., Surgeon. Granted ten days' leave of absence from September 17, 1910.

WILLIAMS, L. L., Surgeon. Granted seven days' leave of absence from September 19, 1910, under paragraph 189, Service Regulations.

Promotion.

Pharmacist C. R. Ott promoted to pharmacist of the second class, to date from August 29, 1910.

Boards Convened.

Board of medical officers convened to meet at the Marine Hospital, San Francisco, Cal., September 26, 1910, for the examination of Assistant Surgeon Friench Simpson, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Surgeon Rupert Blue, chairman; Passed Assistant Surgeon F. N. Trotter; Passed Assistant Surgeon R. E. Ebersole, recorder.

Board of medical officers convened to meet at the Marine Hospital, Stapleton, N. Y., September 26, 1910, for the examination of Assistant Surgeon R. A. Herring, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Surgeon Hiram W. Austin, chairman; Passed Assistant Surgeon W. A. Korn; Passed Assistant Surgeon George L. Collins, recorder.

Board of medical officers convened to meet at Philadelphia, Pa., September 21, 1910, for the purpose of determining the physical condition of Surgeon Eugene Wasdin. Detail for the board: Surgeon Hiram W. Austin, chairman, and Surgeon W. G. Stimpson, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending September 24, 1910:

ASHBURN, P. M., Major, Medical Corps. September 14th, left Army General Hospital, San Francisco, California, en route to Camp Atascadero, California.

BAYLEY, R. C., Lieutenant, Medical Corps. September 19th, relieved from further duty in the Philippine Division, to take effect upon the arrival in San Francisco, California, on transport *Logan*, and will report to Superintendent of the Army Transport Service for assignment to duty as surgeon of the *Logan*.

BURKET, JOHN A., Lieutenant, Medical Corps. September 15th, left Fort Riley, Kansas, with the 17th Cavalry, on practice march.

COLE, BLASE, Lieutenant, Medical Reserve Corps. September 20th, relieved from duty at Fort Crook, Nebraska, and ordered to proceed to this city for a course of instruction at the Army Medical School, commencing October 1, 1910.

COLE, C. C., Captain, Medical Corps. September 16th, granted leave of absence to and including October 15, 1910.

COWLES, CALVIN D., Jr., Lieutenant, Medical Corps. September 19th, will upon being relieved from duty as surgeon of the *Logan*, by Lieutenant Bayley, report by telegraph to the Adjutant General of the Army for further orders.

CRUM, WAYNE H., Lieutenant, Medical Corps. September 21st, granted ten days' leave of absence.

DAVIS, WILLIAM R., Captain, Medical Corps. September 21st, granted two months' leave of absence.

FLYNN, THOMAS J., Lieutenant, Medical Reserve Corps. The leave of absence granted him by S. O. No. 156, September 17, 1910, Fort Ethan Allen, Vermont, is extended three days.

Frick, Euclid B., Lieutenant Colonel, Medical Corps. September 13th, in addition to present duties will take charge of the office of the Chief Surgeon, Department of California, during the absence of Lieutenant Colonel H. S. T. Harris, Medical Corps, at Atascadero, California.

Gibson, Paul W., Lieutenant, Medical Reserve Corps. September 15th, left Fort Yellowstone, Wyoming, on ten days' leave of absence.

Heflebower, Roy C., Lieutenant, Medical Corps. September 22d, left Fort Hamilton en route to Fort Slocum, New York, for temporary duty.

Kerr, Robert W., Lieutenant, Medical Corps. September 19th, relieved from further duty in the Philippine Division, to take effect upon arrival at San Francisco, California, on transport *Sheridan,* will report to the Superintendent of the Army Transport Service for assignment as surgeon of the *Sheridan.*

Knox, Howard A., Lieutenant, Medical Corps. September 22d, left from detached duty to Fort Myer, Virginia, on ten days' leave of absence.

Le Wald, Leon T., Captain, Medical Corps. Resignation of his commission as an officer of the Army accepted by the President, to take effect September 25, 1910.

Munson, Edward L., Major, Medical Corps. Detailed to attend and deliver lecture at the twelfth annual convention of the National Guard Association of the United States at St. Louis, Mo., October 3, 1910.

Norriss, H. C. R., Lieutenant, Medical Reserve Corps. September 16th, granted leave of absence for one month and nineteen days; left Vancouver Barracks, Washington, en route to Martin, N. D., for further orders. September 20th, honorably discharged from the service of the United States, to take effect November 7, 1910.

Pierson, R. H., Captain, Medical Corps. September 17th, left Vancouver Barracks, Washington, en route to Fort Flagler, Washington, for duty.

Register, E. C., Lieutenant, Medical Reserve Corps. September 19th, left Fort H. G. Wright, New York, on ten days' leave of absence.

Scott, Harold O., D. S. September 16th, relieved from duty at Columbus Barracks, Ohio, and ordered to Fort Hamilton, N. Y., for duty.

Sweazey, Verge E., Captain, Medical Corps. September 21st, now on leave of absence, will repair to this city and report in person to the Adjutant General of the Army for further orders.

Tasker, Arthur N., Lieutenant, Medical Corps. September 19th, will, upon being relieved from duty as surgeon of the transport *Sheridan* by Lieutenant Kerr, report by telegraph to the Adjutant General of the Army for further orders.

The following named First Lieutenants, Medical Reserve Corps, recently appointed, are ordered to active service, to take effect September 20, 1910, and will proceed to this city and report in person, at 9 o'clock a. m., October 1 1910, to Colonel Louis A. La Garde, Medical Corps, President of the Army Medical School, for a course of instruction at that school: Fred R. Burnside, Frank N. Chilton, John S. Coulter, William Denton, Harry G. Ford, James F. Johnston, William P. Lamb, Carl A. Scherer, Gordon B. Underwood, James H. Wilson, Faris M. Blair, Albert P. Clark, Edgar D. Craft, George C. Divins, Frederick H. Foncar, Lloyd A. Keflauver, Charles E. McBrayer, Joseph L. Siner, Alleyne von Schrader, William T. Cade, Jr., Dillis S. Conner, Samuel S. Creighton, Lauren S. Eckels, Bert R. Huntington, George B. Lake, George E. Pariseau, John H. Trinder, and John M. Willis.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending September 24, 1910:

Dollard, H. L., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 12, 1910.

Koltes, F. X., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 4, 1910.

May, H. A., Passed Assistant Surgeon. September 20th, detached from the *Charleston* and ordered to the Naval Hospital, Mare Island, California.

Pleadwell, F. L., Surgeon. September 19th, detached from the Naval War College, Newport, R. I., and ordered to temporary duty in the Bureau of Medicine and Surgery, Navy Department.

Scott, T. W., Pharmacist. September 22d, unexpired portion of sick leave revoked; ordered to the Naval Medical School Hospital, Washington, D. C., for observation and treatment.

◆

Births, Marriages, and Deaths.

Born.

Allen.—In Fort Slocum, New York, on Thursday, September 8th, to Lieutenant William H. Allen, Medical Corps, United States Army, and Mrs. Allen, a son.

Married.

Browse—Thomas.—In Baltimore, on Thursday, September 15th, Dr. H. N. Browse and Miss Catherine Thomas.

Dodge—Creason.—In San Francisco, California, on Tuesday, September 6th, Assistant Surgeon Arthur H. Dodge, United States Navy, and Miss Eleanor Creason.

Nichols — Gundry. — In Catonsville, Maryland, on Wednesday, September 21st, Captain Henry J. Nichols, Medical Corps, United States Army, and Miss Grace Gundry.

Peer—Ritter.—In Bensonhurst, New York, on Friday, September 23d, Dr. William H. Peer, of Flushing, and Miss Elsie Ritter.

Died.

Baumgarten.—In St. Louis, Missouri, on Monday, September 19th, Dr. Gustav Baumgarten, aged seventy-four years.

Belding.—In Troy, New York, on Tuesday, September 20th, Dr. Rufus Elisha Belding.

Botts.—In Glasgow, Kentucky, on Monday, September 19th, Dr. Samuel T. Botts.

Bowles.—In Paoli, Indiana, on Sunday, September 18th, Dr. L. S. Bowles, aged seventy-five years.

Crowell.—In East Orange, New Jersey, on Wednesday, September 21st, Dr. John Beverley Crowell, aged sixty years.

Daniel.—In Atlanta, Georgia, on Tuesday, September 13th, Dr. Benjamin Whitaker Daniel, aged seventy-eight years.

Finck.—In Philadelphia, on Monday, September 19th, Dr. Anthony Romig Finck, aged seventy-eight years.

Heisinger.—In Palenville, New York, on Saturday, September 24th, Dr. Charles Heisinger, aged forty-eight years.

Hiltbold.—In Boston, on Tuesday, September 20th, Dr. C. W. Hiltbold, aged thirty-one years.

Huggins.—In St. Louis, Missouri, on Wednesday, September 14th, Dr. Truman E. Huggins.

Kline.—In Cape May, New Jersey, on Wednesday, September 14th, Dr. William Ottinger Kline, Jr.

Levy.—In New Orleans, on Friday, September 16th, Dr. Marx Levy, aged fifty-nine years.

Macalester.—In Denver, Colorado, on Thursday, September 15th, Dr. Richard K. Macalester, aged fifty-one years.

McCarter.—In Kingston, Ontario, Canada, on Friday, September 16th, Dr. J. M. McCarter, aged thirty-seven years.

Phillips.—In New Haven, Connecticut, on Tuesday, September 20th, Dr. John P. Phillips, aged seventy-seven years.

Rahter.—In Atlantic City, New Jersey, on Wednesday, September 21st, Dr. Charles A. Rahter, aged seventy-one years.

Rutter.—In Cleveland, Ohio, on Saturday, September 17th, Dr. Hemley C. Rutter, aged sixty-one years.

Sewell.—In Atlanta, Georgia, on Tuesday, September 20th, Dr. J. Robert Sewell.

Snider.—In Toronto, Ontario, Canada, on Friday, September 16th, Dr. R. O. Snider, aged forty-six years.

Thompson.—In Throop, Pennsylvania, on Monday, September 19th, Dr. James E. Thompson, aged twenty-eight years.

Walter.—In Grand Rapids, Michigan, on Monday, September 19th, Dr. A. A. Walter, aged fifty-six years.

Wood.—In Rowan County, North Carolina, on Wednesday, September 14th, Dr. Daniel Wood.

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Original Communications.

MEDICAL PHOTOGRAPHY.

By NATHAN T. BEERS, M. D.,
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It is difficult to conceive of any branch of science in which photography is of more real service than medicine. And yet, it is rather surprising to note how few of our profession take serious advantage of this most valuable means of record. Radiographers, microscopists, and dermatologists long since found it an indispensable adjunct in their work, and many of our foremost workers in these lines have, of necessity, become expert photographers. In years past our medical journals contained but few illustrations and these usually were woodcuts from photographs or line engravings from crude drawings in pen and ink. At their very best they excited but little interest mainly through their lack of truthful reproduction. But to-day, with the various processes of photography reduced to simple rules of thumb, the medical writer has no valid excuse for not illustrating such articles in which pictures would serve to elucidate the text. With the publisher, good photographs are always acceptable, and many a poorly written article is saved by the photographs which accompany it.

While admitting the advantages of and the necessity for pictures of interesting cases, the medical man, when pressed for his excuse for neglecting to obtain them, usually replies by saying that he knows nothing of the art himself and that his patients are seldom, if ever, willing to permit an outsider to do the work.

It is the purpose of this paper to encourage the physician in making his own photographs; not alone because the patient has the right to demand that he shall, but quite as much because of the simplicity of the processes used in the art to-day. Not only women, but often men, will object to having their objective symptoms photographed even though the physician be his own photographer, and a great deal of tact is at times required to gain the desired end; but to suggest the employment of an outsider to do the work, almost invariably will be met with an indignant refusal and a probable loss of the patient.

When a patient submits to being photographed, he or she has the right to demand that the physician himself shall make the exposure; that he alone shall complete the processes of developing and printing; and that any or all features by which the patient might be associated with, or identified by, shall be eliminated from the negative. In making photographs in which the face of the patient must be included it is best to defy identification by covering one or more features with a small mask of cloth or adhesive plaster. This procedure at the time of exposure usually suffices to allay suspicion and gain the confidence of the sitter; and is by far a better method than altering the image on the negative before printing. However, when the doctor does his own work, the patient is usually ready and willing to afford him every possible assistance and advantage.

The question which comes naturally to the lips of the novice in photography is: What shall I buy, and how shall I use it? I shall attempt to give as simply as possible such information as will serve to assist the medical man in the selection of his outfit, his supplies and their proper use; and if I speak plainly concerning the choice of apparatus and materials, it is hoped that the information will be accepted as a confidential, professional communication to a colleague and not in any sense as advertising the product of one maker or another. Ten years' experience in medical photography and almost as many more in general amateur work have done much to establish certain preferences in my mind; and these I shall set forth boldly, believing that it is best to be plain spoken and frank in a paper of this sort, didactic as it must be, since it is intended for beginners.

Hand cameras, using film, have no place in this work. We must have a camera which will permit of very exact focusing and a tripod sufficiently strong to insure perfect rigidity. The camera should be 5 x 7 in size, using glass plates, and must have a good length of bellows to use in making life size pictures of skin lesions, etc. Select one that is strongly built of well seasoned mahogany; the initial expense is but a few dollars more than the price asked for the cheaper outfits made from soft wood and stained to represent mahogany and which soon warp out of shape and usefulness. It is not necessary that it should be of the folding, leather covered, type; the ordinary view camera, selling around twenty dollars, will answer every requirement. With this is supplied one or more double plateholders and a focusing cloth. I advise the 5 x 7 size because it is practically the smallest size advisable for this class of work; and then, being a standard size with pro-

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fessional photographers, the plates and materials are readily obtainable in a fresh state.

View cameras are sold without lens and shutter equipment, the photographer usually purchasing a lens to suit the class of work on which he is engaged. On the other hand, the folding camera is always equipped with lens and shutter, both of which are, generally, of fair quality, but of limited usefulness. I say of limited usefulness because the lens supplied is what is known as a rectilinear lens, and such a lens must be "stopped down" in order to yield a negative which is in sharp focus all over the plate. Crisp definition over the whole surface of a negative is known in the language of lenses as "flatness of field," and its absence in the work of cheap lenses is due to a lack of correction of the lens itself. Any lens, even the cheapest, will yield fair definition when "stopped down" to a point where only the very centre of the lens, the core, transmits the light from the subject. But should we attempt to use the same lens at wider apertures of diaphragm,—apertures permitting of shorter exposures,—then our troubles commence; the oblique, or marginal, rays from the object are brought to a focus foreign to, and usually in front of, the focal plane of the axial, or central, rays. The theoretical focal plane of such a lens would be saucer shaped and when we come to apply such an image, in practice, to our flat plate, the resulting negative shows distortion. To produce a lens capable of exact work at full aperture requires time, patience, and great skill. The glass itself, Jena glass, is specially made by a secret formula and every step in the grinding of the several lenses which compose the finished series is checked by tests too scientific and involved for me to understand, let alone to describe. Suffice it to say that, after having seen the various processes employed in the manufacture of anastigmat lenses and the critical tests to which they are subjected before being offered for sale, I have never had the courage to question the price asked for these optical gems.

"The smaller the 'stop' used: the longer the exposure, the greater the depth of focus and the flatter the field," applies in the use of the ordinary lens more than in the anastigmat. With the latter, flatness of field is assured at full apertures and where extreme depth of focus is not a positive requisite, the anastigmat may be used "wide open" to gain speed,—a factor of enormous advantage to the medical photographer. Iris diaphragm openings, or stops, are marked by several different systems, but we shall concern ourselves with two only, those in general use in this country: The fractional or F. system and the uniform or U. S. system. In the F. system, the stop diameters are fractional parts of the focal length of the lens. Stop f/8, then, would indicate that the diameter aperture is one eighth of the focal length of the lens, and this focal length is the distance measured from the diaphragm to the ground glass when the lens is focused on infinity. The U. S. system is based on the focal ratio system and the markings give directly the relative exposures. In this system the aperture f/4 is taken as a unit of exposure and is marked 1; the next smaller opening, f/5.6, which requires twice the exposure, is marked 2, etc., each number representing the relative exposure necessary. If No. 1 requires one second, then No. 8 would require eight seconds. The two systems compare as follows:

F. System....	4	5.6	8	11.3	16	22.6	32	45.2	64	90.5
U. System....	1	2	4	8	16	32	64	128	256	512

Depth of focus is that property of a lens by which objects situated at different distances from the lens are rendered sharp and clear in the resulting negative. Without going into scientific reasons for this, suffice it to say that the depth of focus is increased as the aperture of the lens decreases; as the focal length of the lens decreases; and as the distance of the objects from the camera increases. This depth of focus is the same in all lens of the same focal length and at the same aperture, regardless of cost. And so we observe that the real advantage which the high priced anastigmat holds for our use is purely one of speed. But with our work speed is, perhaps, the most important factor, and so the purchase of an anastigmat lens is seriously to be considered by the medical photographer. We have seen by the foregoing that the largest aperture practicable in using the cheap lens is f/8. Larger than this yields distortion. But with an anastigmat working at f/5.6 or f/4 we may open the diaphragm fully and reduce our exposure twice or four times respectively. Put this into practice with a fidgety patient, with a child, or assume that we are working in a poor light and the enormous advantage of speed becomes at once apparent.

I am frequently asked what lens I prefer. The question is a fair one, but it is hard to answer. It is like asking a doctor whose preparation of ergot or whose product of catgut he prefers. Each manufacturer does his best to put out the best preparation and it is usually a mere matter of personal fancy. In a way, the same may be said of lenses. There are half a dozen manufacturers of high grade lenses,—Carl Zeiss, Voigtlaender, C. P. Goerz, Bausch & Lomb, and the Taylor-Hobson Co. —and a lens made by any one of these firms may be purchased without trial and with full confidence that it will perform its duty perfectly. Each photographer has his personal fancy and will advise you accordingly. My own personal preference is for the Cooke lens made by the Taylor-Hobson Company. For my medical work I use their lens of eight inches focal length working at an aperture of f/5.6. This make of lens has given me greater satisfaction than any other, and I believe it excels all others in flatness of field. Then, it is made up without cement being used between the glasses composing the series and this assures permanence to the clearness and speed of the lens. It has been fairly well demonstrated that cement has little effect in reducing the speed or clearness of a lens during the first few years of its existence but I am satisfied that oxidation eventually produces a tinge of color to the cement which naturally tends to slow it. However, this color is, at most, trifling and the maker will recement the lens at small cost.

In the selection of a dry plate for our work it is well to bear one or two points in mind. The difference in price between the good and the bad product is only trifling, but the difference in quality is wide. Make up your mind what plate is best suited to your needs and stick to it. Don't blame the plate for your failures: I have used thousands of plates and have had many, many failures; but never one which I could honestly blame to the plate maker. An orthochromatic, or isochromatic, plate is one which is prepared in such manner as to be able to render colors in their natural values. The ordinary plate is prone to exaggerate the brightness of blues and violets, and the deepness of reds, greens, and yellows. With us the orthochromatic plate is a necessity.

Assuming that the outfit is purchased, the next point to be considered is how to use it. The question of a proper lighting, so important in portraiture, hardly enters here since we usually have to make the best of our surroundings. If the pictures are to be made in a hospital where the operating room is at our disposal, our task is an easy one. The patient should be placed in a quartering light—preferably one coming from the side and a little above the head—which will tend to throw into relief any lesions existing on the surface of the skin. When photographing patients at the office or in their homes, select a bright window, without sunlight entering, screen the lower third with some dark cloth or shade, and should the light be too strong, then cover the upper portion of the window with one thickness of plain gauze. This tends to diffuse the light and give softer renderings in the high lights on the skin and to make the shadows more transparent. If the shadows appear too deep a white sheet held a few feet from the patient on the shadow side will reflect enough light into the shadows to brighten them. With some patients it will be necessary to use a head rest of some sort to steady the head during a long exposure. I often find it advantageous to place very restless people flat on their backs on the floor and by means of a tilting tripod top point the camera downward. This is an especially useful procedure when photographing the empty orbit, mastoid cavities, etc. This position is also advisable when making pictures of the eye, particularly so when there exists a constant flow of tears. It answers well in photographing skin lesions of the chest or abdomen, since whatever motion comes with breathing is parallel with the axis of the lens, and by stopping the lens down a mark or two the increased depth of focus will accommodate it. The photographing of specimens is much simplified with the camera in the vertical position as it does away with pinning the specimens to a board, dripping of fluids, and motion during exposure.

A small hand mirror is useful at times to throw additional light into cavities and to increase the illumination of bloody or reddish areas in pathological specimens. A short time ago I wasted a dozen or more plates in an attempt to photograph an empty orbit and until I thought to make use of this means to properly light the cavity, I was assured of nothing but grim failure. It was almost an impossibility to give sufficient exposure for the dark reds of the orbit and still preserve any quality in the surrounding tissues; but by attaching a small mirror to the leg of the tripod I was able to direct a shaft of light into the cavity and so gain a result impossible by any other means.

Of all the problems in photography, that of proper exposure is the most difficult. One by one the other problems—developing and printing—have yielded to scientific experimentation and have been reduced to mechanical processes, simple in practice and sure in result; but exposure, depending as it does so much upon constantly changing factors, must always be reckoned with. Exposure metres and exposure guides are valuable in their place, and this is usually out of doors; but for our work they are of but little assistance and then one is liable to get into the habit of relying too much upon them. I know of no better way for the amateur to gain a definite knowledge of exposure than by the old method of experimentation. It may cost him a dozen or two of plates, but the information gained in this practical way is worth more in the end than he will at first admit. The plates saved from utter failures by the guess method soon replace those lost in his experimentation, and he always has some definite knowledge in mind as to the proper exposure required in his work. The method is simple. Assuming that the plate holders are numbered, we have but to place our subject in the position selected in our office, request that he remain as still as possible, and, after making a note of the light outside (whether it be bright sun, hazy sun, dull, or very dull), we make three or more exposures under exactly similar conditions save for length of the exposures. Each exposure is noted down on a slip of paper opposite the number of the plate holder and when we remove the plates from the holders for development it is a simple matter to mark with a lead pencil the corresponding number on the corner of each plate. With a fairly bright light outside and the subject sitting within six feet of a window properly shaded with a diffusing screen, our lens stopped to f/8, our first exposure should be four seconds, the second eight seconds, the third twelve, the fourth sixteen, and the fifth twenty seconds. With a lens corrected to work at an aperture of f/5.6, just half of these exposures would produce the same results since the area of the opening at f/5.6 is just twice that at f/8. Our plates are then unloaded in the dark room and in a dim red light properly numbered. Our plate tank is filled with developing solution, the plates placed in the rack, and the rack slid gently into the tank. When the development is completed at the end of twenty minutes, the plates are washed and fixed, washed again, and then allowed to dry. To the initiated it is a simple matter to pick from these test negatives the one showing the best exposure. It will have a fair density in the highlights and detail in the shadows. But the novice had best make a print from each negative and then compare them all together, selecting the one which answers best for his purpose. Or, if he is in doubt, any photographic friend or almost any professional photographer will be glad to select the best exposure from the five negatives. If it should be the negative marked No. 3, then we find on consulting our record slip that we gave it twelve seconds and this speed should be borne in mind for future use on similar subjects in a similar light with the lens stopped to f/8. And from this exposure taken as a standard it is a simple matter to figure out the proper exposures for larger or smaller stops. For example, with the same conditions of light and taking twelve seconds as a standard for an aperture of f/8, then a stop of f/5.6 would require but six seconds, while one of f/11 and f/16 would require twenty-four and forty-eight seconds respectively. The condition of light may be reckoned with as follows: Bright sunlight, one; hazy sunlight, two; dull light, cloudy, three; and very dull, four times the exposure. It may be necessary at times, when photographing children or a very nervous patient, to sacrifice everything for speed. If the light is hazy, which would double the exposure at f/8, we simply open the lens to f/5.6, thereby doubling the aperture and consequently halving the exposure. Another means occasionally very useful is to use a very rapid plate, such as the Lumière sigma, which has easily twice the speed of the other fast plates generally in use. With this plate it is possible to further cut the exposure by about one half.

To sum up, then, assuming that we have determined the exposure necessary for our subject to be eight seconds with an ordinary plate, the lens stopped to f/8 and a bright light outside, we may shorten our exposure to four seconds by using a sigma plate and still further shorten it to two seconds by means of a fine lens capable of being opened to f/5.6.

There was a time when developing was a source of worry and a bugbear to the amateur. But that time has passed for good and all, and the novice is placed upon the same footing with the experienced professional in the use of the developing tank. This is a simple box of nickle plated metal with a water tight cover and a basket or rack with divisions into which the plates are placed in the dark room. The tank is filled with a definite amount of water at a definite temperature, definite amounts of chemicals are added, and the rack containing the plates is lowered into the tank and allowed to remain for a definite length of time. There is nothing left to the skill or judgment of the operator, even a child can produce a negative equal to that of the oldest professional. When the time is up, the rack is removed, the plates fixed, washed, and dried.

The other method is known as the factorial method. It consists in using a developer having a known factor (this factor is usually printed with the formula by the plate maker in his direction slip enclosed with the plates) and by timing the development from the pouring on of the developer to the first appearance of the highlights, this time in seconds is multiplied by the factor, and the product is the length of time which must elapse from the pouring on of the developer to the removal of the plate from the bath. It is a very simple method and is useful when but one or two plates are to be developed.

The use of the plate tank is properly and exhaustively treated upon in the booklet which accompanies each tank, and I shall confine myself to the technique of the tray or hand method of development. With each box of one dozen plates is enclosed a slip on which the manufacturer sets forth a series of formulæ best suited to his plates. It is always best to follow these directions in making up solutions, using the developer recommended by the plate maker and using it exactly as directed. For instance, in the Seed Company's plates the slip enclosed gives a series of half a dozen formulæ and of these we select two for our work. The first is the standard pyro formula which has been in use the world over for many years; the second, a combination of metol and hydroquinone. The former is given to staining the fingernails if used constantly, while the latter has a tendency with many people to create a very troublesome dermatitis. However, neither will give trouble if properly used and the fingers kept out of the solutions as much as possible.

Pyro formula, Seed's:

Solution A.

Pure water,	16 ounces;
Pyro,	1 ounce;
Oxalic acid,	10 grains.

Solution B.

Pure water,	16 ounces;
Sodium sulphite, dry,	2 ounces.

Solution C.

Pure water,	16 ounces;
Sodium carbonate, dry,	2 ounces.

The sulphite of soda and the carbonate of soda used should be the dry or anhydrous chemicals. To use the formula, we take one ounce of each solution and add seven ounces of water at a temperature of about 65° F. The factor for this formula is 12.

Metolhydroquinone formula. Seed's:

Solution A.

Pure water,	32 ounces;
Metol,	60 grains;
Hydroquinone,	60 grains;
Sodium sulphite, dry,	1 ounce.

Solution B.

Pure water,	8 ounces;
Sodium carbonate, dry,	1 ounce.

To use take 2 ounces of A, ½ ounce of B, and two ounces of water.

The factor is 15.

The plate manufacturers all publish little booklets which deal very exhaustively with development, and it is wise for the amateur to secure one of these books for reference and suggestions.

Having mixed our solutions in a graduate or tumbler and placed it conveniently at hand beside our tray, the room is darkened and the ruby lamp lighted. The plate is taken from the holder, dusted with a camel's hair brush, and placed face up (dull side is the face) in the tray and the solution poured over it with a full sweep so that no bubbles may form. The tray is rocked gently, and we start to count seconds until the first signs of the image appear on the plate. This is easily accomplished by hanging or placing the watch or clock near the red light. Starting at the time when the second hand reaches "60" we rock the tray until the first signs of the image appear. Let us assume that we note the first signs at 20 seconds past, then we multiply our factor, which is 12, if we are using the pyro solution, by twenty, and we have 240. Then, at the expiration of 240 seconds, or four minutes, the time being taken from the pouring on of the solution, we remove the plate from the bath and, after giving it a thorough rinse under the tap, place it in the fixing bath, which is made up as follows:

A.

Water,	24 ounces;
Sodium hyposulphite,	8 ounces;
Sodium sulphite,	160 grains.

B.

Water	8 ounces;
Citric acid,	2 drachms;
Alum,	2 drachms.

When dissolved, pour B into A, stirring briskly.

This fixing bath keeps nicely and may be used for negatives and prints until exhausted, a matter of a week or two at least. The developing solutions should always be discarded after use.

When the plates go into the fixing bath, the reverse side shows a silvery whiteness, and until this whiteness has entirely disappeared from the back they should be allowed to remain in the bath. When this has entirely disappeared the plates may be lifted and should be washed under a gentle stream of water from the tap for at least twenty minutes when they may be stood on end in a current of fresh air to dry.

Having accomplished the first stage of our work, the making of the negative, it remains for us to make a positive print on paper, the completion of the process.

The day of solar printing, with its tedious processes and uncertain results, has passed, and the photographer may make his prints at any time, either day or night. The requisites are a few sheets of cyko or velox developing out paper (also known as gaslight paper), a bottle of ready mixed developer, and a fixing bath. The fixing bath used for negatives answers nicely if fresh and clean. The paper is made in several surfaces and two grades of rapidity. For very thin or flat negatives, or where contrast is desired in the print, the "regular" velox or the "normal" cyko is to be selected. But for average negatives, those with a fair amount of density, the "special" velox or "contrast" cyko will be required. The negative is placed glass side down in the printing frame and a sheet of the sensitized paper laid in contact with the film surface of the plate. The back of the frame is clamped in place and the frame held about seven inches from a gas burner, lamp, or electric light for a period of five to twenty seconds according to the density of the negative, the intensity of the light, and the grade of paper in use. "Special" and "contrast" papers requiring but half the exposure of "normal" or "regular" grades. The print is then immersed in the developing solution until the picture is developed up to the density desired when it is given a quick rinse in clean water and transferred to the fixing solution where it remains for half an hour. Then the print is washed for an hour in running water and hung up to dry. When prints are to be used for reproduction and the greatest amount of detail is desired, the glossy surfaced papers should be used. These papers dry with a good gloss, but this gloss may be increased to a perfect glacé by "squeegeeing" the print while wet on to the polished surface of a ferrotype tin. When thoroughly dry the print detaches itself or may be peeled off by raising one corner with a knife blade.

516 Nostrand Avenue.

RADIOGRAMS OF THE DIGESTIVE TRACT BY INFLATION WITH AIR.

By Lewis Gregory Cole, M. D.,
New York,
and Max Einhorn, M. D.,
New York.

In 1906 the writers published a short paper on Röntgenography of the Stomach.[1] We made radiograms of the stomach and colon by the usual method of ingestion and injection of bismuth. At that time we gave as illustrations, several radiograms of stomachs and also colons.

The bismuth method has now become the clinical method used by most radiologists. As we mentioned before, the advantage of this method lies in the fact that no instrumentation is required for the stomach and little instrumentation for the colon. A disadvantage, however, consists in having to administer one or two ounces of bismuth in solution, which is a considerable amount, and which, although very rarely, can develop toxic effects. Such instances of poisoning have been recently described in literature by quite a few authors. We also had occasion to observe a mild degree of poisoning in one of our patients after making a radiogram with bismuth in the stomach. A few hours after the administration of the bismuth into the stomach, an acute diarrhœa developed, and the patient was sick for a few days, but recovered entirely afterward. In this particular case the bismuth was administered in a pint of rich cream.

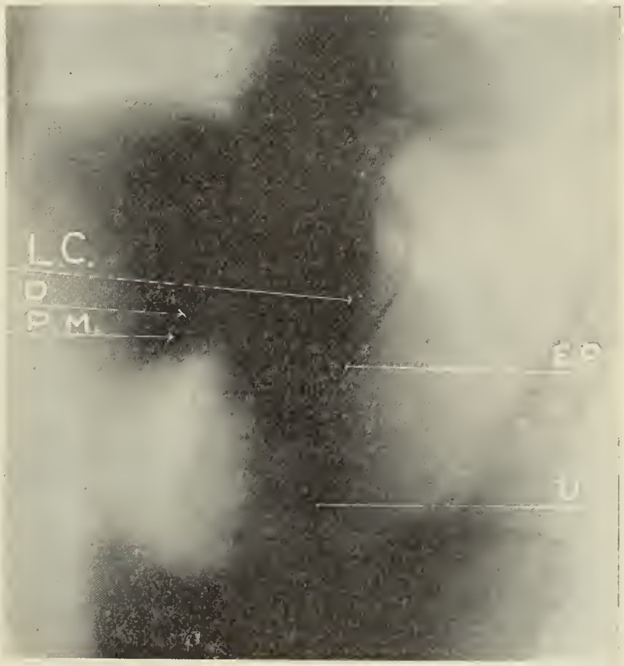

Fig. 1.—(Patient T.) Represents a dilated and prolapsed stomach inflated with air which makes it appear light in the reproduction instead of dark as it would with bismuth. The greater curvature is easily made out. *L. C.* indicates the lesser curvature. *E. P.* indicates Einhorn's pump by means of which the air is pumped into the stomach. *U.* indicates umbilicus. *P. M.* indicates pyloric muscle. *D.* indicates first portion of the duodenum. If this figure is held at a distance of about three feet the stomach will be seen to better advantage.

The bismuth method has another disadvantage,

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[1] L. G. Cole and Max Einhorn: Röntgenography of the Stomach, *Medical Record*, October 13, 1906.

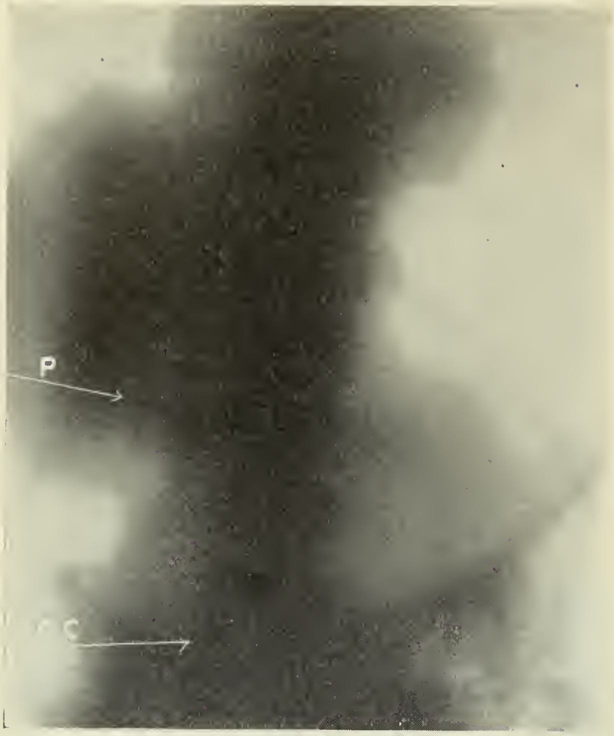


Fig. 2.—(Patient B.) Shows a stomach similar in size, shape, and position, as Fig. 1. *G. C.* indicates the greater curvature. *P.* indicates infiltration or thickening around pylorus.

viz.: in making radiograms of the digestive tract we get a shadow which occasionally may prevent one from recognizing some thickening which produces a shadow by itself. It appeared to both of us that if it were possible to make a radiogram, filling the organ to be radiographed with some substance easily penetrated by the x ray, we would in this way be able to distinguish one organ from another by a greater amount of penetration. We would, perhaps, also be able to recognize tumors in earlier stages than by the other methods. For this purpose we tried inflation with air by inserting a tube into the stomach or into the colon and injecting air with a Pollitzer bulb. This method of making radiograms of the stomach and colon with air may not be entirely new, but neither of us have ever seen it described in literature nor radiograms illustrating it, so that if attempts have been made in this direction they must have been unsuccessful. We may be permitted to reproduce here several radiograms of the stomach and colon taken by this method. We also give here a reproduction of two cases of tumors in the gastric region. One of these tumors was in the spleen and pressing on the stomach, and the other case represents a tumor in the wall of the stomach which can be readily recognized by the air method.

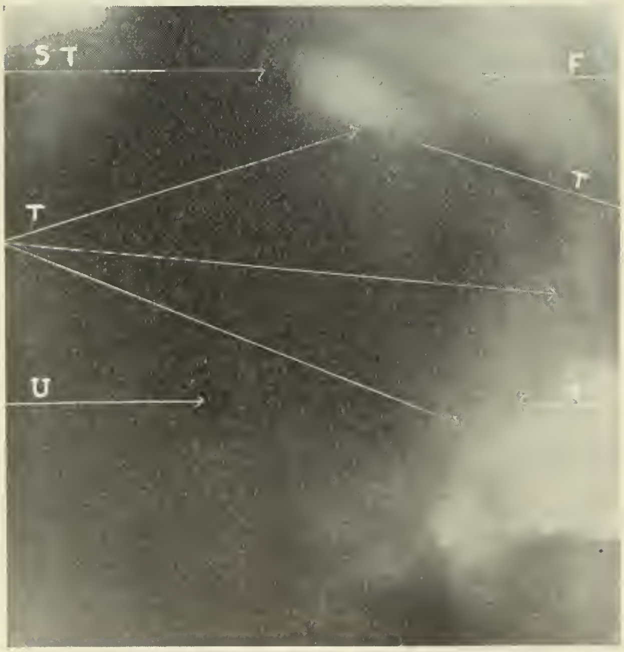


Fig. 3.—(Patient A.) Shows a large tumor outside of the stomach and pressing on it. *T.* indicates tumor, which is surrounded by a light area which is the stomach inflated with air. *F.* indicates fundus of stomach. *S. T.* indicates stomach tube. *U.* indicates umbilicus.

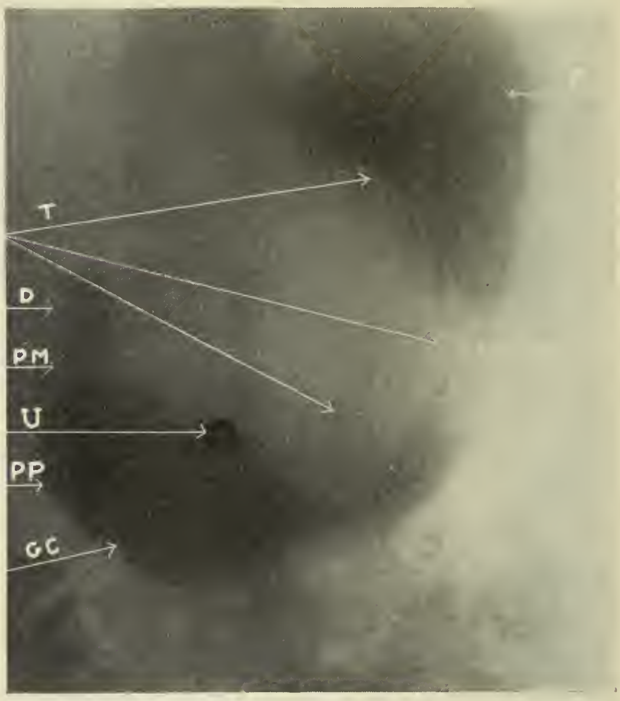


Fig. 4.—(Patient A.) Is the same case as shown in Fig. 3 with a moderate amount of bismuth in the stomach. The tumor which is anterior to the stomach divides the organ into two segments. *F.* indicates fundus. *P. P.* indicates pyloric portion. *G. C.* indicates greater curvature. *U.* indicates umbilicus. *P. M.* indicates pyloric muscle. *D.* indicates duodenum. *T.* indicates tumor. Some of the rugæ are distinctly visible.

Technique: The patient must be absolutely in the fasting condition, and it is best to have given a cathartic the night before, in order to have emptied the entire intestinal tract. A tube of small diameter is then inserted into the stomach, or one of the Einhorn duodenal pumps may be introduced, not allowing it to immigrate into the duodenum, and then a rubber bulb, holding about one ounce of air is attached to either. The markers should have been placed over the umbilicus and the ensiform process, and the patient placed on the table. Although the plates illustrating this paper are all made with the patient lying with the abdomen flat on the plate and the tube perpendicularly over the third lumbar vertebra, the authors believe the results would be better still if the patient were to lie on the back with the tube behind and the plate on top of the abdomen. This would allow the air to accumulate at the pyloric portion of the stomach, where we are most anxious for the detail, and less pressure would be exerted on the abdomen. After everything has been adjusted and the vacuum of the tube regulated to the proper penetration, air is rapidly pumped into the stomach or colon, keeping account of the amount of air injected (each pressure of the bulb amounts to about 30 c.c. of air). In the normal stomach about twenty compressions of the bulb are sufficient to distend the stomach before the patient complains of fullness. In the colon, about thirty or forty compressions will suffice. The same method has also been applied in the œsophagus.

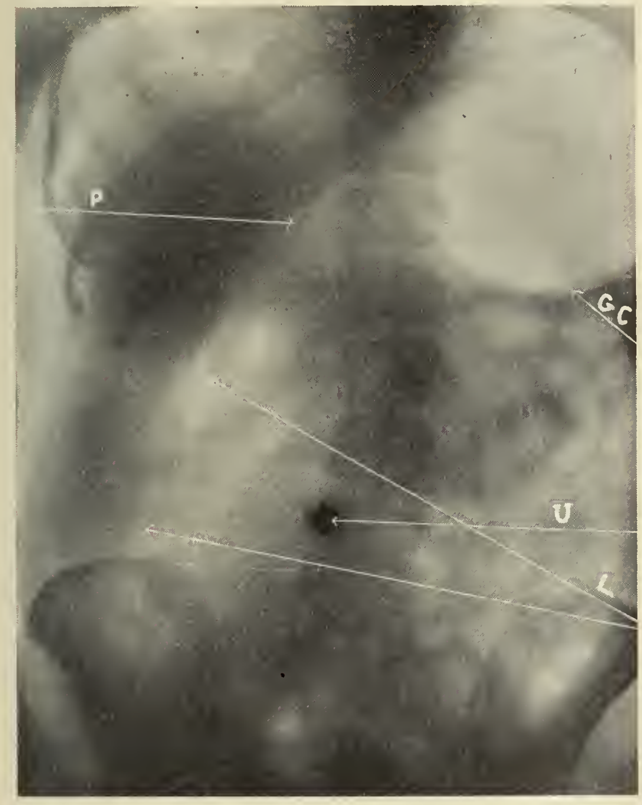


Fig. 5.—(Patient R.) Shows a case in which the stomach and a considerable portion of the intestines have been inflated with air. *G. C.* indicates the greater curvature. *U.* indicates umbilicus. *L.* indicates liver which is considerably prolapsed, and the border of which is very distinctly shown. *P.* indicates pylorus. The elongated and prolapsed liver is the most important feature in this case.

One more important factor in the technique is the making of the radiograph *immediately* after the inflation of the stomach. The authors use an x ray tube backing up a four inch parallel spark when using forty or fifty milliampères. Through such a tube radiograms may be made of a moderate sized patient in about one second. With the screen, this time may be very materially diminished without detracting from the detail of the plate.

While the detail in these radiograms may be recognized near by, they are seen much more distinctly at a distance of thirty feet, or viewed through an opera glass in the inversed position.

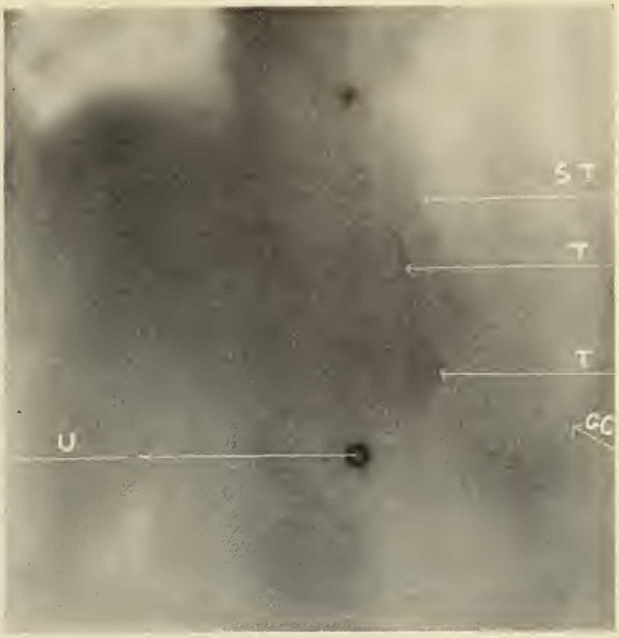


Fig. 6.—(Patient S.) Stomach inflated with air shows a tumor —*T.*—on the lesser curvature which protrudes into its lumen, and also some infiltration of the lesser curvature. *G. C.* indicates the greater curvature which is distinctly shown. *U.* indicates umbilicus. The lower light areas are caused by the entrance of air into the intestine through the new anastomoses.

In looking over a collection of radiograms taken by this method (Figs. 1 to 7), we must say that this is a very practical method, by means of which the size, shape, and position of the different organs of the digestive tract can be determined and tumors can also be recognized.

We would like to remark that while this method

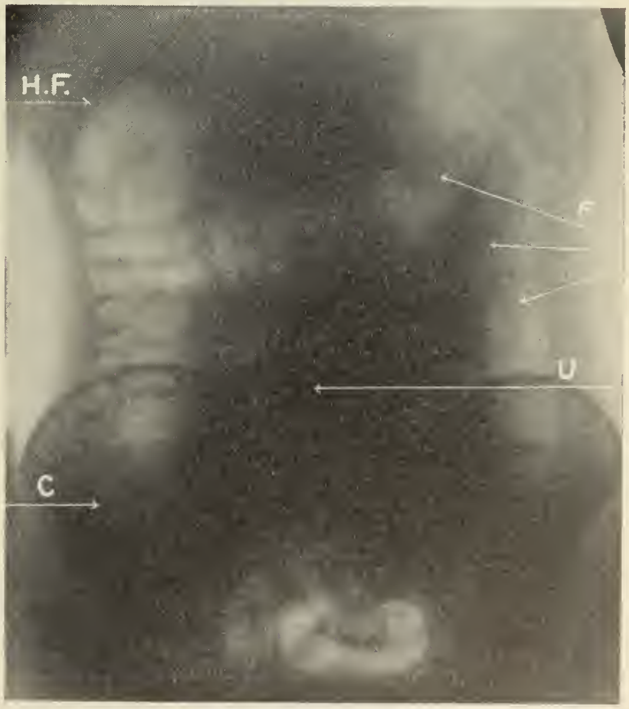


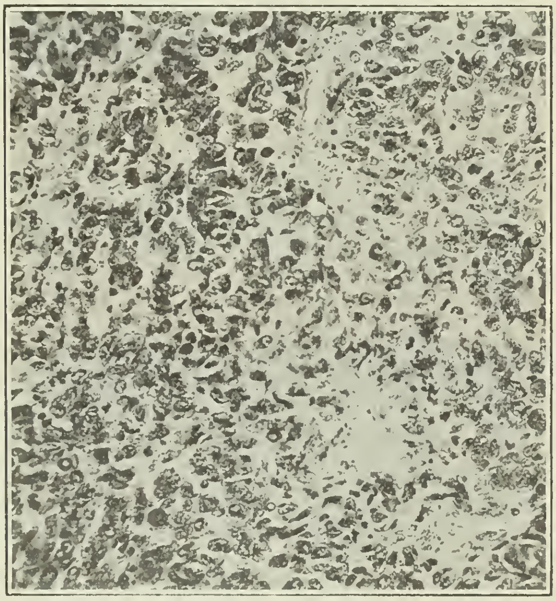
Fig. 7.—(Patient E.) Shows the colon inflated with air. *C.* indicates cæcum. *H. F.* indicates hepatic flexure. *U.* indicates umbilicus. *F.* indicates small amount of fæces which are seen trickling down the descending colon.

certainly is not able to replace the old and well established bismuth method, it will find a place in conjunction with it or when the other cannot be applied.

A CASE OF INTRANASAL SARCOMA.

By R. B. Scarlett, M. D.,
Philadelphia,
Laryngologist to the Chestnut Hill Home for Consumptives; Assistant in the Ear, Throat, and Nose Clinic of the Out Patient Department of the Pennsylvania Hospital.

The extent to which sarcomata may involve the various tissues of the nose, and the regularity with which it develops to a fatal issue should warrant the report of every case, not merely for statistical purposes, but also to encourage original research for means to solve this perplexing problem. Fortunately sarcoma within the nasal chambers is of rare occurrence, although it is found to manifest the same histological characteristics as when situated elsewhere in the body. It is usually a single tumor, of rapid growth, soft, dark red in color, and shows a great tendency to bleed on the slightest touch, sometimes resulting in a severe hæmorrhage. It also manifests a marked inclination to recur after removal.



J. D.; sixty-five years of age; spindle cell sarcoma of nose.

The uncertainty surrounding the true ætiology of tumors is apparent in nasal sarcomata, although some investigators assert to have traced the origin of these growths to degenerated papillomata and polypi. The injury to the tissue incident to the frequent removal of the latter may be a significant factor, for the traumatic origin is well illustrated by Jonathan Wright's[1] case of sarcoma in the nose of an ox, which was thought to have been produced by the frequent clubbing of the part by the driver, who by such action probably stimulated to active proliferation a latent sarcoma matrix.

Case. The tissue responsible for the report of the following case was taken from a man, sixty-five years old, a night watchman by occupation. The tumor occupied the left nasal chamber and the adjoining antrum, was attached to the superior maxilla, and protruded slightly from the left nostril. The cheek of the same side was red, swollen, and bulging to such an extent as to almost close the left eye. The discharge from the nose was purulent and rather copious.

The patient's past history was of little or no consequence. The various manifestations leading up to the formation of the tumor were thought to have dated from one night in August, 1906, when he caught a heavy cold. About a month later, he noticed redness and swelling of the left cheek, which afterward disappeared. From March, 1907, however, he suffered with pain and swelling of the left side of the face, and a purulent discharge from the corresponding nostril. The swelling of the cheek gradually increased. A piece of tissue was removed, examined, and the diagnosis of sarcoma made

The patient was admitted to the Polyclinic Hospital on October 22, 1907, to the service of Dr. Francis Stewart, through whose courtesy I am using the operative notes. For the three days following admission, the nose and throat were cleansed with Dobell's solution, and a mouth wash of listerin and hydrogen peroxide was also used.

On October 25, 1907, the day of the operation, the urine was reported negative. Under ether anæsthesia, the left superior maxilla was excised. The incision was made along the infraorbital ridge to the groove indicating the junction of the nose and the cheek, was then carried downward around the ala of the nose, and through the middle of the upper lip. The flap was dissected down and drawn outward. With the exposure of the region over the antrum, the tumor was seen to have grown through the anterior wall of this cavity, and was just beneath the skin. The malar bone was cut through with a chisel, and the nasal process severed near the inner canthus with the same instrument. The maxillary bones were separated with a saw, and with the use of bone forceps the left superior maxilla was torn away. The growth was found to be purulent and foul smelling. The hæmorrhage was comparatively slight. The cavity was packed with sterile gauze, the skin flap replaced and sutured with silk worm gut, and the suture line dusted with thymol iodide.

Shortly after the operation the patient was given a hypodermic injection of one quarter of a grain of morphine. His susceptibility to the drug was soon evident. His respirations became labored and infrequent, and his pupils pin point. With proper medication, however, this condition was relieved.

The following day the packing was removed, with no hæmorrhage, and the nose sprayed four times a day with Dobell's solution. The left eye was douched with boric acid, and compresses of the same solution were used.

With the exception of several infected stitches, the wound healed by first intention, but a very offensive, purulent discharge persisted for some time from the nose and mouth.

The tissue examined showed some evidence of the tumor being of a mixed variety, although spindle cells predominated. They were in various stages of development, showed pale nuclei and a scarcity of chromatin filaments, and had no definite arrangement. A variation in the shape of the cells was sometimes noted, not infrequently appearing round. Many small round cells of a lymphocytic nature were scattered throughout the specimen. Streaks of connective tissue were seen here and there, but in the tumor proper no definite stroma could be made out. The bloodvessels were poorly developed, and not infrequently the cells which composed the walls had a combed out appearance. On one edge of the specimen was attached a piece of mucous membrane, beneath which the tissue was more or less œdematous. Within this area was a liberal deposit of hæmosiderin. An exudate of an inflammatory nature appeared on the surface. At a point which would indicate the previous attachment of the tumor, a hæmorrhage had taken place in the surrounding tissue. The bloodvessels were usually filled.

While this growth could rightly be called a mixed sarcoma, the predominance of spindle cells prompted a diagnosis of spindle cell sarcoma.

The growth unfortunately recurred, and with kidney complications, the patient succumbed about a year later.

4009 Chestnut Street.

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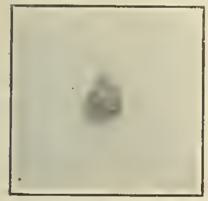
[1] *Medical Record*, April 20, 1895.

AN IRREGULARLY PEARLSHAPED BONE FORMATION IN THE MASTOID PROCESS.

By Emil Amberg, M. D.,
Detroit.

Mrs. M. F. McC., forty-one years old, suffered from what was called the grippe, about the middle of April, 1910. After a severe coughing spell during the night she found her ear discharging about April 20th, but experienced no pain. She stated that for a couple of days the discharge was clear, then it became bloody and very free; three days later it became purulent. A couple of days previous to April 20th, when I saw patient for the first time, pain developed on the mastoid but mostly below and behind it. She said that she had had marked chills about every day for a week. There also developed difficulty in opening her mouth. On April 27th, the temperature was 101° F., at 3.30 p. m. and at 9 p. m.

I opened the mastoid on April 28th. No free pus was encountered, at least not observed. The tip was evacuated, and inwardly from the terminal cells the curette and probe met with little resistance. The temperature reached 99.4° F. at 8 p. m., 102° F. at 5 a. m., and 99.8° F. at 9 a. m. the next day. May 1st it reached 100.2° F. and 100.4° F.



Pearllike bone formation in the mastoid.

The patient succumbed later on to an intradural abscess and meningitis, with symptoms of abscess in the right motor region (autopsy).

I report this case on account of a peculiar and in my experience unique finding in the diploetic mastoid process. The outer surface of the mastoid cortex did not present anything unusual. In the mastoid I found a pearllike bone formation (see figure). It was about double as large as the head of the hammer, was apparently attached with a small stem, and showed a minute sharp pointed process. The specimen measured 3.5x3.0x2.5 mm. The attachment was somewhat curved, 3 mm. long and from 0.5 to 1.0 mm. thick, and in the specimen about 1 mm. high, a little excrescence was 1.5 mm. long and from 0.5 to 1.0 mm. thick. I could not tell where it originated. I found it somewhat removed from the cortex in the mastoid cavity. It is perhaps not impossible that it was dislocated by the chisel from the inner wall of the cortex, but this is mentioned only as a remote possibility.

270 Woodward Avenue.

THE DOCTOR'S DUTY IN TUBERCULOSIS.*

By John Girdwood, M. D.,
Baltimore, Md.,
Assistant Physician, Phipps Tuberculosis Dispensary, Johns Hopkins Hospital; Physician in Charge, Christ Church Tuberculosis Dispensary.

It is a very unpleasant duty which I feel compelled to perform this evening, when I bring before this society The Doctor's Duty in Tuberculosis. I do so because I feel that that duty is not thoroughly appreciated by the great majority of practising physicians. In our relations to our patients and the public, we not only have the opportunity, but it is our duty as well, to accomplish a great deal toward the prevention of tuberculosis.

In the matter of education, we hold a particularly favorable position; when we speak it is with a certain amount of authority; what our patients hear elsewhere, they repeat to us for our opinion, and their ultimate conclusion is based on what we have to say. We must, therefore, be correctly informed, or our influence will be pernicious. I must speak for a more thorough cooperation of the profession, with the various antituberculosis leagues and lay agencies which are working to accomplish the suppression of tuberculosis, and to establish and maintain the various efforts for the relief of those affected. I do not think that physicians generally appreciate this great work. Many seem to think they are antagonistic. I feel that there should be a united effort of all agencies which are working in the same direction. We should more frequently consider the economic aspects of the disease, especially when the patient is the wage earner. We should not allow them to expose themselves unnecessarily to infection, especially during convalescence from an acute disease. We should teach them that the best plan is always the cheapest. Often very troublesome questions will arise in the management of a case, which will call for serious consideration, such as change of climate, change of occupation, the disruption of a family, etc. Each case must of necessity be considered on its own merits, but certain principles should always be kept in view, the most important of which are, first, to prevent infection; second, to restore the patient to the class of wage earners.

The physician's responsibility is threefold: 1. To the patient; 2, to society; and, 3, to the State.

1. *Responsibility to the Patient.* Our first responsibility to the patient is to make an early diagnosis. Considering the prevalence of tuberculosis, we should constantly be on the lookout for it. The family physician is generally the first to be consulted, and he should therefore give the patient a thorough examination, remembering that if he dismisses him without proper attention, he may delay his second visit until the disease has had time to progress, or to cause more pronounced symptoms. The disease is so insidious in its onset, and the symptoms so slight, that it is sometimes difficult to convince a patient that he is infected. That the disease is not more frequently discovered in the incipient stage is quite evident. The average percentage of these cases in the various sanatoria is seldom more than twenty, the percentage in our own State Sanatorium is twenty-nine. This condition is partly due to the fact that the patient does not seek advice sufficiently early, but it is also due to the failure of the physician to recognize it. The first cause may be overcome by education of the laity in the initial symptoms, and the necessity for consultation. The second, by more care and knowledge on the part of the doctor. There are several essential points which will help us to arrive at a diagnosis: 1. Family history; 2, history of exposure; 3, personal history; 4, enquiry for early symptoms; 5, thorough physical examination; 6, examination of sputum; and, 7, tuberculin tests.

1. Family history. Although heredity has practically been excluded at the present day, we should constantly remember that many children are infected very early in life and do not manifest symptoms until later. It is, therefore, necessary to determine if any member of the patient's family has had the disease.

2. History of exposure is very much more important, and will be a great help in diagnosis, especially if it was intimate and prolonged.

3. Personal history should be carefully inquired

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*Read at a special meeting of the Baltimore City Medical Society, March 10, 1910.

into, to determine any previous pulmonary diseases, their duration and association with present illness.

4. Enquiry for early symptoms. Among these may be mentioned cough, afternoon fever, loss of weight, and hæmoptysis. Cough is the most frequent initial symptom, and the one for which the patients seek advice. It should, therefore, be more seriously considered than it often is. We are too prone to dismiss it as bronchitis or some throat trouble without a thorough investigation. I would recommend this rule: *Consider every case of cough lasting for several weeks, especially in one not susceptible, as being possibly tuberculous, until you have employed every available means of excluding it.*

Afternoon fever will not be detected unless it is looked for, therefore, the necessity for the use of the thermometer; its use should become a habit. Professor Cornet thus speaks of fever: "One of the most important points in diagnosis, and I may add in therapy, is the early and exact estimation of the temperature; the great importance of this symptom warrants the utmost care in determining it,—the pulse constitutes a very unreliable index of that temperature." The patient should be instructed in the use of the thermometer, and be required to take his temperature at two or four hour intervals for several days a week. This is possible even with dispensary patients. Professor Calmette says: "Among clinical signs, that should be sought for with the greatest attention, that which deserves to be mentioned first is the instability of the body temperature, the irregularities observed after alternations of slight fatigue and repose in persons normally fever free, indicate a functional disturbance of nutrition, which, in the majority of cases, is associated with beginning tuberculosis." In general, the thermic equilibrium is disturbed in tuberculous individuals, before any other manifestation makes its appearance. An hour's walk is enough to produce an elevation of temperature of from four fifths of a degree to one degree (Centigrade) observation taken at short intervals during several periods of twenty-four hours, day and night, may put the examiner on the track of a suspected diagnosis.

Weight. Of great importance is the observation of the body weight; if a man takes sufficient nourishment, and yet constantly loses weight, one is justified in suspecting tuberculosis, unless there is some other evident cause. The doctor should personally watch this symptom.

Hæmoptysis. This symptom I wish to emphasize, because I do not think its importance is appreciated, I might almost say that it is more convincing to the patient than to the doctor. Professor Cornet thus speaks of it: "In the vast majority of cases it speaks for pulmonary tuberculosis, although it is not absolutely pathognomonic. Various as are the possible causes, in practice one will rarely err if a patient feels a sudden tickling in the throat, and then coughs up foamy blood mixed with air, in assuming that pulmonary tuberculosis is present and treating accordingly." There are many other symptoms which should be carefully observed, such as malaise, loss of appetite, fatigue after the usual work, etc.

5. Physical examination is probably the most important means of diagnosis, but it should be thorough. The profession must realize that the first consideration is to bare the chest of the patient. The examination should include inspection, palpation, percussion, and auscultation, and may need to be repeated several times. The average doctor would become very much more proficient if he would practise his examination more frequently. I do not care to discuss the physical phenomena which may be considered as positive evidence of the disease. I have left that to others, but I do want to emphasize this point, in the absence of very positive physical signs, but where two or three symptoms are present, we would be justified in considering the case one of probable tuberculosis and instituting appropriate treatment. Such a procedure would insure the best ultimate result.

6. Examination of sputum. That the majority of practising physicians do not appreciate the necessity for early and repeated examinations of the sputum, is evident from the fact that but 393 physicians in this city sent specimens to the Health Department laboratory during the year 1908. Making allowance for those who are specialists, or have sputum examination done elsewhere, I think it a conservative estimate, that fifty per cent. do not avail themselves of this opportunity for diagnosis. That the absolute and positive proof of tuberculosis should be neglected by such a large proportion of physicians, indicates a degree of apathy or carelessness almost incredible, and unless remedied, would call for a more radical method from health authorities.

7. Tuberculin tests. The technique of the various tuberculin tests should be acquired by the general practitioner, and may be of considerable help to him in diagnosis; although the results are not always conclusive, they are nevertheless very suggestive.

Tell the patient the truth. After we have made a positive diagnosis, it is our duty to tell the patient the whole truth. I think it may be called criminal negligence when we fail to do so. This is necessary for several reasons: First, because we must have the cooperation of the patient, if treatment is to be of any advantage; second, because he must be taught that the disease is contagious, and that the infected individual is the one who is responsible for its spread. No sentimental considerations can outweigh these. That many physicians do not tell the patient the truth, is the observation of all those who have attended many advanced cases. In corroboration of this fact, I will quote from a letter recently published in the *Baltimore Sun*. It is headed, Should Doctors Hide the Truth? and continues:

> In view of the present fight against tuberculosis, I ask this question, should doctors hide the truth and lead a man to believe his lungs are sound, and thus expose the rest of his family to that dread disease? For several years I have been under the impression that my lungs were affected, and have pleaded with several doctors to tell me the truth, and not hide it from me, as I had a wife and child who were dear to me, and did not care to place them in any danger, but it was the same old story: "Your lungs are all right." I have been examined by one of my boyhood companions, one whom I thought would be interested

> in me and put me on the right road to recovery. I have applied for examination at one of the principal hospitals in this city, and they told me the same old story. I applied for examination at another physician's office and paid my fifty cents with the same results—only to find out later that he told one of my wife's relatives that I did have tuberculosis. Think what it might have meant to me, if any one of the above mentioned had been open and frank in their statements, so that I could have lived accordingly, instead of continuing on in ignorance of my real condition, exposing my wife and child to the danger of contracting the disease. Who knows the condition of our newest babe, which would not have been, had I known my true condition? Who is to be held accountable for this innocent babe's health, because the truth was hid? For some time past I have felt that my health was declining but continued to struggle along at my employment to provide bread for my little family, and at last decided to make another try at a well known hospital where they did not hide the truth, and told me that I should not be working, but should be at home in bed. They are now trying to have me placed in a sanatorium for consumptives, where I hope to be able to build myself up again, if it is not too late. In conclusion allow me to ask,—Do they expect to keep down tuberculosis by hiding the truth?

What a rebuke, and to think that it should appear in the public press. It should make us blush with shame, for such is the story of many patients. I hope that no member of this faculty will ever again "hide the truth."

The time is not far distant when the doctor will be held legally responsible, when he neglects the proper measures of diagnosis, or hides the truth afterward. I do not think it would be difficult to convince a jury of the doctor's responsibility and liability, if he neglected to examine the sputum when it could be shown that that was all that was necessary for a diagnosis. We should be a friend to the patient as well as his medical adviser, and may thus be of assistance in relieving his material necessities. A word from us may bring forth the means which he needs to allow him to discontinue his work and put himself under proper treatment; there are many ways of accomplishing this result. Only recently have I succeeded in interesting an employer in a man who needed several weeks' rest in bed to prevent the breaking down of an old lesion.

Treatment. We should by every possible means endeavor to convince our patient that he should enter a sanatorium for treatment,—first, because his chances for recovery are very much better there; and second, because he removes the danger of infecting his own family. We should never allow a patient to go to the country or to a health resort, unless we can place him under the care of a physician whom we know to be competent, as he simply establishes another focus of infection. One who is familiar with conditions in the Blue Ridge Mountains in this State, during the summer season, will see the wisdom of this advice.

Home treatment. The physician's responsibility is a very serious one if the patient must be treated in his home. He should aim to establish as complete isolation as possible, for the patient must be impressed with the fact that he has a contagious disease, which may be communicated to the other members of his family unless he observes the rules given him, for the disposal of sputum, etc. That the essentials of treatment, rest, fresh air, and good food, are not generally appreciated is quite evident. We will often be surprised to see the remarkable effect on the temperature, cough, and other symptoms by absolute rest in bed for several weeks, yet how often do we see patients walking about with a temperature of 100° F. or over, under the impression that they must take exercise, and with the consent of the doctor.

We may often be able to utilize a porch, shed, or roof at very little expense, and thus get the patient entirely out of doors. The prejudice against sleeping out of doors is gradually being overcome. We will have to give special attention to the diet, and include all the milk and eggs possible. Other details of home treatment cannot be considered at this time. There are a number of excellent and very comprehensive works published which are available to everyone, containing explicit instructions for home treatment.

II. *Responsibility to Society.* The doctor's responsibility to society may be summarized in one word, *prevention.* That he individually may do much in prevention is unquestionable. I have already mentioned his influence in education, both to the patient and the family. In order that his influence may be felt, I think he should more clearly and definitely understand the methods of infection. They may be briefly stated as follows: First, that probably ninety-eight per cent. of all tuberculosis in man is of human origin; second, that the individual infected is the one who is responsible for its spread, either directly or indirectly; third, that contact must be intimate and prolonged; fourth, that infection takes place within the home, workshop, or other place of human habitation; fifth, that probably not more than two per cent. of cases are of bovine origin, through contamination with food.

In the management of all other contagious diseases, efforts have been made to discover the ætiological factor and the methods through which it affects man. When this is known we have dealt directly with it and have not wasted our time in an attempt to produce immunity, such as has been the plan with the exception of smallpox, where a definite immunizing substance was obtained. It seems to me that similar efforts must be directed against tuberculosis, keeping in mind the rules just stated. I realize that there are many difficulties to be overcome, but I believe that our efforts should be along the lines indicated.

III. *Responsibility to the State.* The physician's duty to the state is that he fulfill the requirements of the law, first, by registration of all cases of tuberculosis, and, second, by instituting certain measures of protection.

1. Registration. It is generally acknowledged that registration of all cases to the local board of health is most important. It not only gives the health officer knowledge of its prevalence and the localities where it occurs most frequently, but it may assist him in discovering possible sources of infection. It has therefore been made compulsory, yet, out of over 2,200 doctors in the State of Maryland, but 595 fulfilled this requirement during the year 1908. Making allowance for those who do not have the opportunity to attend these cases, I estimate that not more than thirty-seven per cent. observed the law. I am authorized to say, that the

State Board of Health will prosecute by due process of law any physician who fails in this requirement, and it has actually instituted proceedings against a well known practitioner of this city, who persistently refuses to report his cases after repeated requests to do so. I hope this may be a warning to others.

2. Measures for protection—disinfection. The law says that "apartments occupied by a consumptive shall be deemed infected, and when vacated either by removal or death shall be disinfected by the Board of Health, and it shall be the duty of the householder, physician, or other person having knowledge of the facts to notify the local Board of Health." The importance of this law cannot be too strongly emphasized, as I feel assured that the more generally it is observed, the fewer will be the number of new cases. I would extend this law, so that all houses vacated should be disinfected before they are rented to a new tenant. Householders should also occasionally disinfect their homes, as there is danger from visitors, etc. The State Board of Health is required to "transmit to the physician reporting any case of pulmonary or laryngeal tuberculosis, a printed report naming such procedures and precautions as in its opinion are necessary or desirable to be taken on the premises of the said tuberculous case. If the attending physician is unwilling or unable to do so, these duties shall devolve upon the local Board of Health. If the physician shall comply with this requirement, the State Board of Health shall pay him a fee of $1.50."

During the year 1908, 2,734 cases were reported and but 731 fees were paid to 595 physicians. This shows how few physicians are taking the time and trouble to instruct the patient and his family, not that others may not be doing so, but I think it may be safely assumed that very few are giving such careful instruction. Unless these provisions are more generally observed, it seems to me that it must inevitably become the function of the State Board of Health to assume this function provided in the law. In this connection it may be of interest to read what Dr. Newsholme, of England, has to say on The Doctor in his Relation to the Health Board:

> The most conscientious and indefatigable doctor can usually only ensure the carrying out of a portion of the measures of prevention. He may do so if his patient is wealthy and intelligent, he certainly cannot, if his patient belongs to the working classes, who contribute the vast majority of the cases of phthisis; between these two extremes are patients in whose behalf a varying degree of intervention, on the part of the local authorities, is required. There is no wish on the part of such authorities or their officers to interfere, but only to help. If proper steps are taken to prevent indiscriminate expectoration, for destroying any infectious material already deposited by the patient and for tracing possible connection with other cases of phthisis, the less the intervention between the medical man and his patient the better. But in actual practice most phthisical patients have medical men in attendance only at intervals, and for a short portion of their total illness. Visits of an educational character are certainly needed in the intervals of professional attendance, if not also, while the latter is in operation. In actual experience in Brighton, although a considerable number of tuberculous patients have been notified in private as well as in dispensary and hospital practice, no appreciable friction has been caused by my visits or those of my assistant, and a large amount of carelessness as to the disposal of sputum has been stopped.

There may be another advantage in the local Board of Health assuming supervision of all cases. It may tend to prevent patients shifting from one doctor to another, or in their patronizing advertised cures or patent medicines. If the health department doctor corroborated the statements of the attending physician and assured him that the proper treatment had been advised, it would encourage him to continue that treatment, and further, if the patient were required to take the necessary methods of protection, no matter who the attending physician may be, it may assist in bringing about this very desirable reform.

Personally, I should like to have the assistance of the local health officer, in some cases in which it is impossible to enforce instructions. I think it might have a healthy influence through fear of the consequences of neglect. There are several causes for the existing conditions: 1. Ignorance; 2, carelessness; 3, commercialism.

1. Ignorance. The prevalence of tuberculosis should be sufficient reason for every physician acquainting himself with the various methods of diagnosis. Careful attention to the symptoms already mentioned should lead to a probable diagnosis. Thorough physical examination frequently repeated will lead to more thorough efficiency. The various dispensaries should encourage the doctor to bring his patients for consultation. A plan has been suggested by which the family physician will be notified when his patient applies for diagnosis, and he will be requested to come with the patient for consultation. If he refuses, the patient will be requested to come alone. By this means much dispensary abuse might be corrected and the doctor will also receive instruction.

2. Carelessness. There is no excuse for carelessness. If a man is too busy to devote sufficient time for a thorough history and examination of his patient, and dismisses him without it, he abuses his confidence and inflicts a positive injury. I would recommend a definite plan of examination to be recorded on a card kept for the purpose; such a plan would necessitate more attention to detail, which after all is the secret of accurate diagnosis.

3. Commercialism. That there are many doctors who make their profession simply a business is a sad reality. Their object is to retain all the patronage possible. The diagnosis of tuberculosis is therefore withheld. To tell the patient that which he does not want to hear or believe is poor business policy, as it will cause the patient to seek advice elsewhere. Dr. S. W. Mitchell thus describes him "as a man who never expresses an opinion until he determines what the patient wants to hear. This type is only too common, and will be reached only through the law."

Conclusion. In conclusion, I appeal to all members of the profession to uphold their traditions of honesty and unselfish devotion to the interests of their patients. I appeal to them to remember that they are the greatest factor in this great fight against tuberculosis. I appeal to them to fulfill every obligation before they are compelled to do so by law.

102 East Twenty-fifth Street.

INVERSION OF THE PUERPERAL UTERUS.

By Robert E. Davison, M. D.,
Pittsburgh, Pa.

Inversion of the uterus simply means a turning inside out of the uterus. In puerperal cases the inversion is produced with few exceptions by manual delivery of the placenta, and is fortunately a rare complication of the third stage of labor. Inversion of the nonpuerperal uterus will not be considered in this paper.

The treatment of inversion of the uterus in the past has been scarcely creditable to the medical profession, most of the older methods were inefficient and temporizing while many of the later methods were radical and mutilating, both extremes meeting at a high mortality. Hysterectomy for the treatment of inversion of a puerperal uterus would be looked upon to-day as questionable. The medical profession at the present time demands from the obstetrician an accurate knowledge of prevention and treatment of this unfortunate condition in the puerperal woman, and condemns delay and obsolete methods.

The shock following acute inversion of the uterus is very great indeed, and before any treatment can be applied for the purpose of reinversion, the patient must be treated on general principles for shock and loss of blood. After this has been done the treatment of the inversion is begun. The object of treatment, of course, is to reinvert the uterus. The mechanical difficulty to be overcome is generally admitted to be the tightly contracted cervical ring. The fundus protrudes down through the cervix, and is held by the tightly contracted cervix which is spoken of as the cervical ring.

In the acute cases the first treatment applied for reposition should be taxis alone, and one of the following methods correctly applied usually succeeds (Hirst: *Diseases of Women*):

(a) Inserting the whole hand in the vagina grasp the isthmus of the uterus within the cervix with the fingers and thumb making pressure on the fundus with the palm of the hand, and counter pressure on the cervical ring above the pubes on the abdominal wall (Emmet).

(b) Placing the thumb and middle finger against the uterine horns, making pressure upon one and then upon the other, and after reinverting the horns, replacing the fundus, counter pressure being made upon the cervix from above (Noeggerrath).

(c) Making pressure with the finger tips of one hand against the lateral wall of the lower uterine segment in a direction forward and upward, while an assistant with both hands presses upon the cervical ring, and endeavors to dilate it by traction in opposed directions through the abdominal walls.

(d) Inserting two fingers in the rectum and making traction on the cervical ring while pressure is applied with the other hand to the fundus (Courty).

(e) Inserting two fingers in the rectum, the forefinger of the other hand in the bladder through a dilated urethra, making traction upon the cervical ring while the two thumbs press upon the uterine fundus (Tate, of Cincinnati).

In the chronic cases when the inversion has existed for a number of weeks taxis alone has usually failed. In the past many devices were tried with the hope of overcoming the contraction of the cervix by exhausting the uterine muscle.

(a) A continuous pressure on the fundus was maintained by means of tampons, and also by rubber bags inflated with air or water.

(b) White and Aveling devised an instrument by which a cap was applied to the fundus, attached to a curved rod at the end of which rubber bands were fastened, and these in turn connected with an abdominal belt.

These methods of continuous pressure were very unsatisfactory, because they were unsuccessful and dangerous.

The condition of the patient suffering from chronic inversion of the uterus was so pitiable that naturally operative methods of various kinds were attempted.

(a) By far the most important operation recorded for inversion of the uterus, in the preaseptic era, was done by Dr. T. G. Thomas, of New York (*American Journal of Obstetrics*, 1869). My reader will appreciate the boldness and courage displayed by this surgeon when he reads the following short abstract of his article.

The patient being under ether an assistant forcibly lifted the uterus up against the anterior abdominal wall where the cervical ring could be felt. A small incision was then made down on the ring through the peritonæum. The operator now grasped the uterus in the vagina, and at the same time introduced a steel dilator (not unlike a glove stretcher) into the neck of the sac. He states that the dilatation progressed easily and the uterus was soon restored to its natural form consuming in all twenty-seven minutes. However, the subsequent history of this operation begun so auspiciously failed to become at all reliable.

(b) Barnes and Sims recommended superficial incisions in the cervix as an aid to taxis but not deeply enough to sever the cervical ring. This operation proved inefficient although it was an important step in the evolution of the perfected operation of to-day. The predominant idea in all of the older operations was dilatation of the cervical ring by mechanical means. Barnes and Sims, in their new operation, attacked the seat of difficulty by incisions.

(c) Barton Cooke Hirst, under the title A New Operation for Persistent Inversion of the Uterus (*American Journal of Obstetrics*, January, 1900), reported a successful reposition, as follows: The cervix was slit in the median line posteriorly, the incision being carried higher on the internal than on the external surface, the ring muscle being almost if not completely severed without opening the peritoneal cavity. With comparatively light pressure with one finger tip on the lower uterine segment just above the upper angle of the wound he easily reinverted the uterus. He very cautiously adds in a later writing (*Diseases of Women*, 1904) that if this fails open Douglas's pouch, pack off the peritoneal cavity with gauze, and extend the posterior median incision of the cervix upward toward the fundus far enough to permit reinversion of the uterus. After the reinversion close the incision with sutures, and pack the cul-de-sac with gauze.

Hirst's operation unquestionably is the best operation to-day, and can be executed easily, rapidly, and successfully.

The following case of persistent inversion of the puerperal uterus came under my care at the Suburban General Hospital through the kindness of Dr. W. J. K. Snyder, although he did not deliver the woman:

CASE. Mrs. B., aged twenty-eight, admitted November 12, 1909. The family history contained nothing bearing on her present illness. Her personal history was briefly as follows:

Menstruation began at thirteen, of the twenty-eight day type, normal and regular. Patient married at twenty-one, became pregnant eighteen months afterwards, persistent vomiting, relieved by induced abortion at the seventh week of gestation; a second pregnancy soon followed, instrumental delivery at term of a living child, the child died of cholera infantum at the seventh month; after this the patient suffered from uterine trouble. On September 4, 1909, the second living child was delivered by instruments. The third stage of this labor was complicated by an adherent placenta. The placenta was finally delivered with inversion of the uterus. Just what technique was used in the removal of the placenta was not ascertained. The woman by this time was in a serious condition from loss of blood and shock. The shock was soon overcome with restoratives, but she continued to have uterine hæmorrhage. All attempts at reposition covering a period of about three weeks failed. Her physician packed the vagina with gauze to control the bleeding and advised hysterectomy. The patient refused to submit to the operation and sought other medical advice. In the seventh week of the inversion Dr. Snyder was consulted. He first attempted reinversion without anæsthesia and then made a second attempt with anæsthesia using taxis alone but failed to reinvert the uterus. By this time the patient was very weak and anæmic, due to the uterine hæmorrhages, and any attempt at reposition always accelerated the bleeding. He advised operative treatment and had her admitted to the hospital, where I saw the patient for the first time.

Examination: A young woman weak, emaciated, very pale, mind bright and intelligent, and suffering no pain while at rest in bed. The heart and lungs gave no evidence of disease. The abdomen was generally negative. No blood tests were made. The urine examination was negative. The striking symptom was the deep pallor. Gynæcological examination: Scars present in the urethra and both vaginal fornices from childbirth. Relaxed vaginal outlet with a rectocele and a small cystocele. The inverted uterus was evident, a large rounded mass, deep red in color, not ulcerated, and covered with mucous membrane which bled easily to touch. The entire organ was inverted excepting the cervix, and much enlarged. No attempt was made at reposition.

Operator's Note. Ether was administered. The vagina was held wide open with specula, and the posterior lip of the cervix incised in the median line, the knife being carried as high up on the mucous membrane of the cervix as the inversion fold would permit, and a deep incision made through the cervical ring. This technique was readily carried out with very little bleeding. The operator had hoped that reposition could now be readily accomplished, however, several attempts to reinvert the uterus failed. It was plain that a more radical procedure was necessary. Accordingly the posterior cervical incision was extended posteriorly into the cul-de-sac allowing the cervix to come down into the vagina and exposing to view the conical depression covered with peritonæum. No adhesions of any kind were present. The cervical incision was extended in the median line to the fundus before reposition was possible. The body of the uterus was soft and easily torn which forbade violent manipulations. Any other method than incision would likely have ruptured the uterus in this case besides failing to reinvert. The line of incision was closed with mattress sutures of catgut, reinforced on the peritoneal surface by a tier of Lambert sutures of fine silk. The uterus was returned to the pelvis, and supported in its normal position by filling the cul-de-sac with iodoform gauze. This operation required about thirty minutes' time with very little loss of blood.

Recovery was rapid. The patient left the hospital in twelve days.

The patient was readmitted to the hospital for operation on January 4, 1910. Examination showed the uterus low but not fixed by adhesions, the range of motion was very good indeed. The cul-de-sac had closed leaving very little evidence of the former incision. The cervix was enlarged, firm, with bad union. Bimanual examination showed a retroverted uterus of medium degree quite firm to the touch, and freely movable. The cervix and perinæum were repaired, but the patient's general condition forbade shortening of the ligaments at this sitting. The patient's recovery was uninterrupted and her condition satisfactory when she left the hospital.

628 FULTON BUILDING.

OBSERVATIONS UPON THE BALDY OPERATION FOR RETROVERSION OF THE UTERUS.

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It has been said that there are as many operative procedures for the reduction of retroversion of the uterus, as there are surgeons engaged in the practise of operative gynæcology, and as a corollary that the mechanism of this condition is not understood and no common ground exists. In point of fact, however, the mechanism concerned in the production of retroversion is so complex and appeals to the mechanical sense from so many viewpoints, that the multiplicity of operations devised, far from indicating any uncertainty as to results, are simply an index of the many ways by which the same end may be attained.

It is a fact that very few patients with uncomplicated cases of retroversion ever present themselves for treatment for the relief of symptoms. While many cases are supposedly uncomplicated, the vast majority present, upon direct inspection of the internal genitalia, some group of complications, possibly all sequelæ of a primary backward displacement, but in themselves responsible for the subjective symptoms.

Following this thought Baldy has formulated two general rules of the highest importance in approaching the question of the form of operation in such cases. The first of these is to the effect that "retrodisplacements of the uterus are mostly coincident with other lesions, and where such is the case the symptoms almost universally come from the associated disease." The truth herein expressed being taken for granted—and experience has shown it to hold true—the second rule obviously follows. It is that "the treatment of retrodisplacement is a misnomer. It should be, the treatment of the conditions in connection with which retrodisplacements of the uterus occur as an incident."

Now, in dealing with this condition, if it is necessary to regard the complications and secondary disease as the essential features and indications to be met, it follows that there are certain operative factors that must obtain if an ideal result is to be secured. These, in part, are as follows: 1. The operation must bring the uterus forward and maintain it in this position. 2. It must offer facilities for dealing with adhesions and other intraabdominal complications. 3. It must attain the desired result with a minimum amount of mutilation. 4. The uterus must remain a pelvic organ and not be dragged high up into the abdomen. 5. Such motility and power of equal and general expansion must be maintained that subsequent gestation is not impeded. 6. The generally prolapsed and enlarged ovaries should be elevated, together with the uterus.

Applying these principles to the various types of operation in common use, it is at once noted that the Alexander-Adams technique fails in that it offers no opportunity for dealing with intraabdominal conditions, and inasmuch as it utilizes the weak abdominal end of the round ligament, it cannot insure any permanency of result. The great group of suspension or fixation operations, those upon the general plan of ventrosuspension, fail signally in that the uterus is dragged out of its normal position in the pelvis and made an abdominal organ, and because of the danger of direct, firm adhesion of the fundus uteri to the anterior abdominal wall, with its consequent inability to expand equally and the natural sequence of dystocia, should pregnancy supervene. Between these extremes of operative method are many procedures, far better in theory and results, but all failing to comply with the requirements of the ideal operation. Such methods as those of Wylie, Mann, and Dudley, who perform an intraperitoneal shortening of the round ligaments by folding them upon themselves in various ways, all ignore one of the chief factors of success, the elevation of the prolapsed or adherent ovaries.

Some ten years ago Baldy proposed an operation which has been steadily performed since by him and his assistants, with increasingly favorable results and the gradual development of a technique that seems to combine all the essentials of the ideal operation. Expressed in its simplest terms, this procedure consists, after median laparotomy, in perforating with a long hæmostatic forceps the broad ligament on both sides of the uterus and just beneath the insertion of the ovarian ligament. The perforation is carried out from behind forward; a loop of the round ligament is seized in the grasp of the forceps, drawn through the perforation, and sutured to its fellow of the opposite side behind the fundus uteri, just above its centre of gravity. The mechanism of this operation is a definite one, the principle of levers being utilized. It will be readily seen that if the perforation in the base of the broad ligament is considered as the fulcrum, the body of the uterus, the weight, and the pull upon the round ligaments as the power, there is present a lever of the second class, that is, one in which the fulcrum lies between the power and the weight. Besides these forces, there remains the abdominal insertion of the round ligaments which, though but secondarily used as traction rods, are of distinct service in maintaining the median position of the uterus and in preventing the sagging downward and prolapse of the entire internal genitalia.

In how far does this operation fulfil the requirements as stated before? 1. Experience of some 250 cases has shown that it does decidedly throw the uterus into anteposition and retain it there. 2. Being an entirely intraperitoneal method, it permits any complications or associated conditions to be appropriately treated. 3. It is in no sense a mutilating operation, no structures being severed and no bloodvessels divided. 4. The uterus remains a pelvic organ and is not forcibly dragged high up into the abdomen to assume a position totally at variance with its normal relation, as is the case in the suspension operations. 5. Normal movability is retained. Inasmuch as the round ligament shares in the general hypertrophy of pregnancy, the equal and general increase in size of the uterus is not interfered with. The sling formed by the round ligaments has become a part of that organ and expands with it, to involute also in due course. 6. Far beyond all other procedures, does this operation elevate and support the prolapsed ovaries. The shelf made by the round ligaments, just under the ovarian ligament, insures the ovaries a high, normal position without the possibility of their sinking into the cul-de-sac and with no operative interference with the structures themselves.

There are several points about this method that have been or may be subject to adverse criticism. It has been stated that it greatly disturbs the normal anatomical relations of the parts involved and is therefore unsurgical. In reply it may be said, retroversion of the uterus is practically always accompanied by relaxation of all the ligaments which hold that organ upward and forward and that as a consequence, there is a general sagging of the entire pelvic contents. The elasticity and tone of the ligaments has been destroyed and cannot be restored. It is, therefore, impracticable to resort to merely reducing such overstretched tissues to their normal length and to depend upon them for support. It is necessary to secure a substitute and for this purpose the unstretched, firm uterine ends of the round ligament are utilized and converted into a powerful fibromuscular sling in which the elevated uterus and its appendages may swing high in the pelvis and free from any element of fixation.

It has also been held that pregnancy, by overstretching the round ligament sling, would predispose to a relapse into the original condition during the puerperium. It must be conceded that no form of operation devised for the cure of retroversion may be said absolutely to stand the test of pregnancy. The same condition of affairs that first caused subinvolution, passive congestion, and retroversion, may well do so again despite any form of operative correction that may have been established. However, in the operation under discussion, inasmuch as within a very few months, the round ligament sling becomes fused with the uterine fundus and practically a part of it, it may readily be reasoned that these tissues will share both in the hyperplasia of pregnancy and the subsequent hypoplasia. There is no indication to believe that any tendency will develop for the recurrence of the retroversion, and indeed, experience has borne out this contention. The same argument applies to dystocia. It is not conceivable that any interference with the normal, equal expansion of the uterus is or may be caused by the Baldy operation.

With regard to its efficiency, again the experience of some ten years must be taken into consideration, and this shows conclusively that by this method the uterus is held in its normal movable forward position and the ovaries are elevated and swing free in the pelvis.

The only other reasonable objection is the ease of performance and this is of no importance because, while truly the formation of a fibromuscular sling is not so simple as a ventrosuspension for example, still it is a rapid and plain procedure to any one qualified to perform intraabdominal surgery.

The experience of the writer with the Baldy operation is based upon some two hundred and fifty cases, seen either as an assistant to Dr. Baldy or personally performed. At first there were a few recurrences, due in every case to imperfect understanding of the principles involved and to errors in technique. Since then there has been no return of the original lesion reported. Further, there has not been recorded a single instance of difficult labor following this operation, though a considerable number of the patients are known to have borne one or more children since its performance. With these results in mind this operation is most highly recommended as being mechanically correct, surgically simple and nonmutilating, and efficient in its results.

348 SOUTH FIFTEENTH STREET.

A BRIEF HISTORY OF EPIDEMICS AMONG THE ALASKA INDIANS, WITH SPECIAL REFERENCE TO TUBERCULOSIS.

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In this paper[1] I will only mention such facts, which, to my mind and from personal investigations, are accurate and occurred since 1867. Prior to this date whatever epidemics, if any, attacked the natives in Alaska is not known for the reason that the Indians in Alaska were practically the last ones to be disturbed, so to speak, by the white people. The Indians all along the Alaskan coast are known as the Tsimshean tribe, and it is said they were more peaceful in their savage days than the natives in the interior of the States, and also had a vague idea of religious legends as told in the Bible, and everything of importance which happened many years back. I mention this to show that when some of the old natives were questioned at the time of the first epidemic, whether they had ever had similar ailments before, they denied it. That they were not exempt from disease is known, and it would be preposterous to think otherwise, but I am inclined to believe that the diseases they have had prior to the settlement of the civilized people were of trivial character.

Previous to their adoption of civilized customs and habits, they had among them "medicine men." The medicine man was known as the "shoowansh,"[2] and a brief description of him, I believe, is in place. Herbs were resorted to when the cause was apparent and were left to the discretion of the wise old women. They are still in great demand. The medicine man did not employ them, his speciality was to cure those who got sick without any readily explainable cause. He was supposed to be an exorciser and able to drive out the evil spirits that had taken possession of the suffering body. The patient was compelled to be entirely undressed so that the evil spirit should vanish under his influence more readily. After this preliminary preparation he would rattle over him, dance with savage gesticulations, and blow in the mouth and nostrils. He would also pound and knead him. This would be kept up until the patient said that he was improved. The medicine man demanded large fees, and if he was unable to improve the patient he was compelled to return the blankets, which were then their standard currency. In order to become a medicine man he had to prove his ability by demonstrating to his people some supernatural power he possessed. This was accomplished by some trick or deceit. While my paper is not intended to describe the Indian customs I believe the interest in the above justifies its insertion.

Measles was the first of the infectious diseases which unmercifully attacked the Indians in Alaska. In the year 1869 one of them while trading with the British settlers in British Columbia, contracted the disease and thus returned to his tribe. In a brief space of time all the tribes along the coast were vigorously assaulted with this epidemic. Adults were not exempted, and instead showed less resistability than the children. About thirty-three per cent. of those who were attacked succumbed, not as the result of the effect of the disease, but due to the advice of their medicine men which was to have the patients bathe in cold water upon the appearance of the eruption. By doing this the rash would naturally fade or even disappear temporarily and hence it was their adopted means of combating measles. They ignored the valuable advice offered them by the physician,[3] who tried to help them. Pneumonia was the most frequent complication, and this was invariably fatal to them, and is so even at present. In 1888 a second epidemic of measles occurred. This time they were already semicivilized and were under the care of the missionaries, nevertheless the death rate was about twenty per cent. which was due to the complication of diphtheria.

In 1872 smallpox broke out in a similar way as did measles in 1869, and it proved how terribly fatal variola is among the original races. This disease got hold of them very brutally, which was a great deal the fault of the white people with whom they traded. They were driven away to their homes without even cautioning them of its power of contagion. It took but a short time to have their villages reduced in population. It is as yet not definitely known where the disease originated, but it is traced to the Spaniards who conveyed it to America in the sixteenth century. As I have already mentioned Alaska was practically the last place on the North American continent to be habitated by other than Indians, it is therefore plausible to conclude that smallpox never existed among them prior to this outbreak.

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[1] The facts and data given in this paper have been obtained by personal observations and questioning in several Indian villages. I desire to thank Dr. R. Tomlinson, of Metlakhatla, Alaska, for his assistance rendered. He was the first missionary physician among the Alaskan natives. He has been with them since 1866 and he kindly furnished me the very valuable data.

[2] The literal translation in the Tsimshean tongue is *blower*.

[3] Dr. Tomlinson offered his advice and help, but at that time they were still hazy of believing white people.

Usually in nearly all cases of variola, as the rash comes out, the temperature declines and the general symptoms subside which is known as the first stage. Of special interest is that during this epidemic the vast majority succumbed before the eruptive stage, and my theory for this is that the first stage was abnormally prolonged, due to the latent appearance of the papules. This is explained by the fact that the Indian's skin is tough and probably hypertrophied from the constant exposure. Thus the lowered temperature would continue, the action of the toxines become more and more virulent, and the extra amount of tension thrown on the kidneys would hasten death.

In 1876 an epidemic of influenza broke out. It invaded nearly all the villages on the coast with great rapidity. The majority of those attacked made uneventful recoveries, very few having complications. This disease existed among them long before civilization made its entrance. They termed it the "ten day fever" because those who administered herbs advised them to be confined at home for ten days in order to get well, which advice was rather up to date.

It is my opinion, after making close observations, and personal inquiries, that the Indians were in a way exempt from numerous infectious and contagious diseases until the settlement of the white people among them. It is even hinted that venereal diseases were totally absent among them, but it is not for me to prove or to disprove this conjecture. Suffice it to say that in their savage days when a girl reached the age of puberty she was shut up in a separate enclosure of the house and carefully watched until she was married. The probabilities are therefore that venereal diseases, if not altogether absent, existed mildly. It is, perhaps, needless to mention that syphilis especially has been very common among them since they were taught to hire the girls for prostitution. Thus the epidemics which so severely attacked them and the injurious effect of the venereal diseases are to my belief a greater cause of their reduction in population than war has been. The Indian race has been dying out steadily and rapidly, and the few that are left are gradually wasting away as the result of the disease which has attracted the attention of every civilized country on the globe, namely, the white plague.

Did tuberculosis exist among the Indians before the white people came? This would be a good question to ask, and my answer is, Yes. They have used the bark of hemlock to control pulmonary hæmorrhage for a long time, and the nature of the disease was told by one generation to the next. It is already a well known fact that the Indians of this continent are very prone to this disease. It is reported that the death rate due to this disease is not so great in the northwestern part of the continent as in the east; nevertheless, I am tempted to disbelieve it. I have frequently examined Indians in Alaska and found them to be in the incipient stage of tuberculosis and being treated for other troubles. The reason for this is that the Alaska Indians are not under an "Indian reservation" similar to those in the States, and are therefore not properly cared for.

Why are the Indians so very susceptible to pulmonary tuberculosis? In answer to this I beg to offer another of my personal theories. It must be remembered that the Indians in their savage days lived in a so called transitional stage. They were not confined to their houses all through the year. They had their hunting season, fishing season, etc., to each of which they devoted three months. This mode of life offered great resistance to the disease. It is rather unfortunate to admit that their power of resistance, not only to tuberculosis but to other diseases, decreased in proportion to their adoption of civilized customs. The missionaries taught them the Christian gospel and introduced many traits of civilization, but they have sadly neglected to teach them the first principle of sanitation and personal hygiene. The kind of houses their ancestors adopted are still used, namely, single rooms with no windows, and a place for a fire which in addition to its regular uses also serves to burn refuse. All this accounts for their being suitable candidates for that disease which is slowly extinguishing the race.

U. S. S. *Gedney.*

ALCOHOL AND ITS RELATION TO LEGAL MEDICINE.*

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In bringing this subject before you, it is not my purpose to urge a higher license for liquor dealers or to advocate prohibition or for that matter to denounce it. I shall leave these matters to political economists, sociologists, and the clergy.

It is my endeavor to present to you the effects of alcohol on the human economy,—the havoc it plays with the organism, if taken in excess, and its relation to legal medicine. In discussing the former, one must necessarily rehash old academic questions, because the pathology and symptomatology of alcoholism is the same to-day as it was when the oldest amongst us were students.

A tendency to minimize the therapeutic effect of alcohol has lately made its appearance. No less an authority than Professor D. George Rosenfeld, from Breslau, in *Das Indikationsgebiet des Alkahols bei der Behandlung innerer Krankheiten,* states that alcohol lessens the powers of resistance in the acute infectious diseases, that even its moderate use has a bad effect on the heart and kidneys, that congestion of the stomach and bowels are produced by it, that the effect on functional and organic diseases of the nervous system is uniformly harmful, and that it is a potent factor in the production of arteriosclerosis, gout, and obesity. He admits, however, that it has a limited food value; in wasting diseases, it may spare tissue metabolism and in diabetes to some extent replace carbohydrates. The greatest objection to its use, he says, lies in the fact that hardly a week passes in which every physician does not see examples of individuals wrecked in health and happiness through the abuse of alcohol. He asks if anyone has ever seen one injured by leaving it alone?

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*Read in abstract before the Eastern Medical Society, June 10, 1910.

Personally, I do not believe that alcohol has outlived its usefulness in therapeutics. I know of no better diffusible stimulant than alcohol in cardiac failure from any cause, in the different varieties of sepsis, and in the infectious fevers, except perhaps scarlet fever. It certainly has an advantage over other stimulants in the fact, that in emergency cases one can find it almost in every household in one form or another. For nutritive purposes, however, I believe we can find in our therapeutical armamentarium other and less dangerous articles than alcohol.

There are very few individuals who do not know the gross effects of an overdose of alcohol, but there are some manifestations of alcoholism—such as amblyopia, neuritis, delirium tremens, alcoholic convulsions, and alcoholic insanity—that the average general practitioner does not have much opportunity to observe and study. These manifestations are of great consequence to the patients and are of sufficient interest both theoretically and practically to every physician to merit our discussion of them in detail.

That the subject is of great importance, clinically, becomes at once evident if we look over the statistics of some of our large hospitals. In Bellevue, for instance, in 1907, out of a total number of 33,224 patients, 6,376 were admitted for alcoholism; in 1904 total number of patients was 29,741, alcoholic 8,941. Among the alcoholics in these figures, the patients admitted for ailments due to alcohol secondarily such as chronic Bright's disease and cirrhosis of the liver are not included. In this institution, says Dr. Lambert, the clinical picture of disease is so complicated by the morbid processes produced by alcohol that it seems necessary to study carefully the alcoholic patients in order to clearly appreciate the medical service in the general medical wards of the hospital. About 400,000 individuals are arrested annually in this country for drunkenness. In the workhouse on Blackwell's Island, out of 17,471 in 1907 committed prisoners, 4,728 were committed for being alcoholic. The average mortality is about ten to every 10,000. This varies in different countries and climates.

Here, then, we have a product, the abuse of which causes a higher morbidity and mortality than any other known or unknown cause. In committing this ravage, alcohol has all the pathogenic bacilli and cocci individually and collectively bowing to it and pronouncing it supreme in destructive power.

If one expectorates a few thousand tubercle bacilli on the floor of our spittoonless public conveyances, he is haled to court as a misdemeanant, and either fined or lodged in jail or both; but if this same individual's brother, a chronic alcoholic, gets drunk, and in an insane fit of jealousy, while so drunk, kills his wife and their boarder, his attorney pleads justification and insanity and if he is an able advocate moves a sympathetic jury of his peers to tears, so that they render a verdict of acquittal, and in a few months this same individual is depicted as a hero before the footlights in some sensational melodrama.

Next to heredity alcohol in forty-two per cent. of the cases according to Kraepelin is the most prolific cause of insanity, idiocy, and epilepsy. Generally speaking, sixty per cent. of all crime committed is the result directly or indirectly of alcohol or association with drinking houses. The alcoholic rounder is one of the best culture media for the tubercle bacillus. Moral depravity finds its best friend in whiskey. In the law, the alcoholic is *sui generis;* it was necessary to establish for him different rules of conduct than for ordinary men. His status in the law, is as unique as it is on the sidewalk.

Alcohol acts as a dynamic agent in the system, it exerts a direct action upon the nerve centres, the functions of which it either modifies, perverts, or totally abolishes; it accumulates in the nerve centres and in the blood and finally is eliminated from the system by all channels, the watery portion of the urine is increased, and urea is diminished; the former is due to increased blood pressure, the latter to diminished oxidation of nitrogenous tissue.

The influence of alcohol upon albumin metabolism has been studied by Rosemann (*Archiv für die gesamte Physiologie,* lxxxvi, p. 307) who concludes that ninety per cent. of the ingested alcohol is oxidized in the system and the potential energy furnished by it is just as much an albumin saving agent as an equivalent amount of carbohydrate or fat.

But, at the same time, there is exerted upon the albumin a harmful effect due to the deleterious influence of the alcohol upon the cells, which more or less counteracts its albumin saving effects. The harmful action upon the tissue cells which is obscured during the first few days of its ingestion, later decreases and finally ceases altogether, because the cells to a certain extent have become accustomed to it. After this period its effect is mainly fat and albumin saving; the remote and injurious effect which albumin has upon all the organs of the body, if taken in large amounts and for a long time, exclude it from the class of foods in a healthy person. Thus we see that alcohol is not an aliment proper, and that, like opium, it prevents—to a certain extent—denutrition.

Its poisonous effect on the blood is evidenced by the fact that the red cells lose their normal resistance; they become shriveled up; the phagocytes are decreased in number, and the bactericidal power of the serum is diminished. The normal oxidation of the blood is retarded; the secretions are diminished, as is also the production of energy and muscle power; and with this the excretion of waste products is checked so that the blood becomes a soil for the growth of new toxines and ferments.

Like all substances producing stupefaction when taken in large doses, it is an excitant when given in small doses. It decreases the temperature of the body and increases that of the brain; thus explaining the effect of congestion of this organ.

DIFFERENT DEGREES OF DRUNKENNESS.

These are important from a medicolegal standpoint. In acute alcoholism there are three stages: first, excitation; second, perturbation; and, third, stupefaction. First: The individual becomes communicative, happy, good natured, witty, generous.

sociable, and obliging. A naturally timid man becomes bold. If he continues to drink, his ideas become hazy, his tongue thick, he speaks louder on account of the buzzing sensation in his ears, his power of hearing is blunted, so that he does not hear himself speak, and judges others by himself, the merry feeling of the first period has been replaced by an excess of susceptibility and irritation, he does not take a joke; is willing and ready to fight; if you do not listen to him, he gets angry; he is not conscious of what he does and says.

In the second period of drunkenness Hoffbauer says a man still has the use of his senses, although they are notably affected; his memory and intellect have left him; he does not think of the future, and has forgotten the past. The least occasion is sufficient to awaken in him the greatest passion. although his mind may change very easily. In this stage he is like a maniac. This stage is of short duration, and if the individual keeps on drinking he reaches the third stage, in which the whole muscular system becomes relaxed; he is unable to walk; is vomiting; his mind and all his faculties are stolid; he cannot find his home, nor does he recognize his friends.

These stages vary and are merged into each other. The first glass, says an Italian proverb, gives lamb's blood, which causes man to be good natured; the second, tiger's blood, which makes one furious; the third, hog's blood, which causes one to roll in the mud.

In the third stage there is a certain degree of anæsthesia; the most painful wounds are not felt. We know that before the introduction of anæsthetics, patients were intoxicated until complete relaxation took place, before a fracture would be reduced. A woman may become so intoxicated that rape can be committed, and the victim would be totally unaware. The evidence in such a case is very difficult to obtain when there are no objective signs of resistance, except perhaps in a virgin.

Intoxication does not present the same character when caused by different drinks. Some have greater effect on the digestive system, others on the nervous system; of the former beer is the best example.

Sometimes poison is given to an individual with homicidal intent, and to conceal this, some form of alcohol is injected into the mouth and stomach to give rise to the suspicion that the individual died of acute alcoholism. In the latter case the alcohol would be found in the stomach and trachea, but no evidence of it in the brain, such as dilated bloodvessels, in the pia, sinuses, and plexuses gorged with blood and serum in the ventricles, as is the case in actual poisoning with alcohol.

Alcohol must be distinguished from poisoning with opium, belladonna, stramonium, ether, chloroform, turpentine, benzine, carbolic acid, and its derivatives. It may be confounded with the delirium of typhoid, congestion of the brain, apoplexy, the sequelæ of a wound on the head, concussion, and compression of the brain. This problem becomes more difficult if an apoplexy is actually complicated with drunkenness, or with convulsions or coma of nephritis and epilepsy.

WOUNDS.

A wound inflicted on an alcoholic may become fatal when the same wound in a nonalcoholic would be of no consequence. Such wounds very frequently become the infecting points of erysipelas.

DELIRIUM TREMENS.

Synonyms, "horrors," "*mania a potu,*" "jim jams," "seeing snakes." This is only an incident in the history of chronic alcoholism. It is classed by Horatio C. Wood among the toxæmic insanities, resulting from the long continued action of the alcoholic poison on the brain.

In a heavy drinker the affection may come on at any time; it may come on during the debauch, or at the end of it. It may come on while the quantity of alcohol ingested is being increased, gradually decreased, or suddenly withdrawn. A spree in a temperate person, no matter how prolonged, is rarely, if ever, followed by delirium tremens.

Accidents, great physical injuries, sudden fright, an acute inflammation, a pneumonia, an attack of erysipelas, a fracture with even a very low temperature, will give rise to an attack of delirium tremens. In the minds of laymen, and even physicians, this condition is apt to be associated with a present state of alcoholism. The experience of numerous observers, as well as my own, in numerous cases, however, has been that a chronic alcoholic will have stopped drinking to excess, and as late as a week or even ten days after his last spree an attack of delirium tremens will develop.

The symptomatology of this condition is too well known to all of us to necessitate a detailed description. It is marked by an interchange of delusions, terrifying illusions, hallucinations, fine and coarse tremors of the small muscles, and sleeplessness; consciousness is impaired but not lost; there is great susceptibility to fright. There is a feeling of crabs, snakes, and spiders upon and in the skin. There is, however, one feature of this delirium on which I wish to lay special emphasis, namely, that these patients "forever want to get away" and attend to some imaginary business; they need, therefore, to be watched constantly, for in their delusions they may jump out of the window and escape or be killed. Robust patients have on account of the irritation of their mucous membranes some febrile reaction, and a high tension pulse, but in the average run of patients, the disease is typically asthenic, with loss of muscular power, tremulousness, dilated pupils, a rapid and feeble pulse, and death from cardiac failure or a wet brain. Average mortality in my cases is about five per cent. Kirchoff reports that twenty per cent. of his cases of delirium tremens die. Duration of the phenomenon is from three to eight days. I may note in passing that I have never seen a case of delirium tremens in a Jew or in an Italian. And the worst case I have ever seen was in a negress, thirty years of age.

On autopsy, besides the regular primary and secondary changes in the viscera, produced by the alcohol, one will find marked œdema of the brain, with or without œdema of the pia. This is known as a "wet brain." There may also be a chronic pachymeningitis resulting in thickening of the dura. The brain proper may be normal, œdematous, or atrophied.

Treatment: As in pneumonia and typhoid, numerous specifics have been exploited; I have tried them all and conclude that as in the diseases mentioned we must resort to symptomatic treatment. In most of these patients forced feeding must be resorted to. Some of them must have alcohol in some form to sustain life. To keep them quiet such drugs as chloral, paraldehyde, the bromides, morphine, apomorphine, hyoscine, and ergot must be used; in the administration of which the usual precautions must be taken.

There are, however, two drugs that I should like to say a few words about; these are apomorphine and hyoscine.

Apomorphine hydrochloride. Apomorphine hydrochloride was considered at one time the best hypnotic in delirium tremens. Warren Coleman and Polk, in *American Medicine,* March 8, 1902, conclude the drug to be a valuable hypnotic for hard drinkers, who have taken more than their usual quantity, and for chronic alcoholics, who have abstained from food for several days while continuing to drink, but they have found the remedy valueless in delirium tremens; they found its administration attended with danger, and got no satisfactory results when they employed the drug in cases bordering only on delirium tremens. This has been, in the main, my experience with this agent.

Hyoscine hydrobromide. Dr. M. K. Lott and Dr. H. A. Hare, in the *Therapeutic Gazette* of February 15, 1902, advocate the use of hyoscine to break up the alcohol habit; they do this by using it hypodermically in doses of from 1/200 to 1/100 grain every thirty minutes, until the dryness of the mouth and flushing of the face with mild delirium set in. I have had no experience with the drug in this direction, but obtained excellent results in 1/50 grain doses administered hypodermically in patients who could not go to sleep and were on the verge of delirium.

Before closing the question of therapeutics in this affliction it is important to bear in mind that some patients will go to sleep after thorough catharsis, a cold shower, and a dose of strychnine sooner than after the administration of the most powerful hypnotics. Some patients must be kept in a padded cell, others have to be put in a strait jacket, and others do not keep quiet, no matter what may be done for them, and keep on shouting till they die of exhaustion.

Most of the so called cures for chronic alcoholism consist in the administration of some derivative of the belladonna group, systematic catharsis, and gradual withdrawal of alcohol.

ALCOHOLIC CONVULSIONS.

So called alcoholic epilepsy. This condition must not be confounded with convulsions following acute poisoning with alcohol; it occurs most frequently in chronic, hard drinkers, as well as in moderate drinkers. Epileptics as well as nonepileptics may be subject to it. It is marked by profound disturbances of consciousness and severe epileptic convulsions involving the entire body. The convulsion itself resembles *grand mal.* It is usually preceded by an aura and is characterized by a very rapid course of symptoms, their rapid cessation, and a loss of memory for events occurring during this state. Even in nonepileptics these convulsive seizures are apt to return after every severe intoxication. A curious fact observed by me was that the greater the number of these convulsions the less chance was there for the individual to get the delirium tremens. It occurred to me that perhaps these convulsions were manifestations of an acute reaction of the brain cells to the alcoholic poison, and that the poison was thus eliminated from the body by the great activity of the muscles during the convulsions, and failed to have the chronic effect on the cells which is a necessary factor in the production of delirium tremens.

The poisonous effect of alcohol on the special senses is best illustrated by alcoholic amblyopia. From an ætiological standpoint, there are two varieties, one due to ethyl and one to methyl alcohol. F. Van Fleet, in the *Medical Record* of January, 1902, reports a case of sudden complete blindness from drinking a large amount of ethyl alcohol. The lesion was an acute retrobulbar neuritis. The blindness was at first complete, but at the end of six weeks, vision had increased to 20/200 and 3/200. Treatment was total abstinence from alcohol and tobacco with the internal administration of potassium iodide and strychnine. W. Zentmyer, in the *Annals of Ophthalmology* of July, 1901, found in his cases of amblyopia retinal hæmorrhages. In every instance the hæmorrhage was located at the disk, or between it and the macula in the tract of the macular fibres. He considers it probable that the hæmorrhages were produced by the giving way of the alcoholically diseased vessel walls under increased vascular tension. The whole weight of recent evidence is clearly in favor of the view that it is the nerve tissue, especially the neurones of the retina, and their axones extending into the optic nerve that are primarily involved.

Most cases of alcoholic blindness are due to poisoning with methyl alcohol. This usually occurs in eau de cologne drinkers, and in varnishers who use "Columbian spirits" as a menstruum, on account of the cheapness of this variety of alcohol. S. Patello, in the *Ophthalmic Record* of September, 1899, reports two men poisoned by inhaling the vapor while shellacking the inside of beer vats. One of them after working four days had to discontinue on account of nausea, dizziness, and severe frontal headaches; on the fifth day his sight was fogged, and on the sixth day he became totally blind. The other man after working two weeks had similar symptoms. In these cases the optic disk was pale, especially at its outer quadrant; later the disks became still more pale and the vessels were contracted to mere threads. A remarkable case of methyl alcohol poisoning has been reported by Dr. Carl Koller in the *Journal of American Medical Association,* June 4, 1910. Drinking Jamaica ginger to excess also produces amblyopia; the ginger is made by percolating the ground ginger root with alcohol. Pilocarpine and strychnine were used in these cases with varying success.

Another important manifestation of alcoholism is alcoholic neuritis. It follows drinking of spirits rather than of beer. It is most frequently met with as a form of polyneuritis, and it is more common among those who take small quantities frequently. It occurs three times as often in women as in men. Exposure to cold and lack of nourishment are predisposing causes. The condition begins with some general symptoms, and vague rheumatic pains, numbness, and tingling of the fingers, palms, and soles, and cramps in the calves and thick muscles. These symptoms may exist alone for months before the true onset of the disease.

Acute onset in alcoholic neuritis is rather rare. It is more of a subacute or chronic disease. Later the sensory symptoms of the first stage become aggravated, and the motor symptoms make their appearance. These may be merely incoordination, but as a rule are paralytic in nature. The upper or lower limbs or both are involved, but always the corresponding limbs on both sides, and their distal extremities; or there may be motor symptoms in the legs and sensory symptoms in the arms or vice versa. There is tenderness along the nerve trunks and almost invariably in the muscles and occasionally in the skin. Tremor is often conspicuous, long before the loss of power makes its appearance. The knee jerk is lost, because the afferent muscle nerves suffer more than the motor nerves. In the legs, the muscles involved are those supplied by the anterior tibial group of nerves. The bladder and rectum are not involved. The pain and tenderness in the muscles is so great that mere touching of the affected limb with the thinnest bed clothes elicits excruciating pain. Next we get atrophy of the muscles; contractures (foot drop) and also trophic changes in the skin, hair, and nails. The temperature sense is usually normal; strange to say, bedsores are rarely seen. Faradic irritability is lost, and that to voltaism increased. We must be careful to distinguish the condition from spinal cord disease.

Prognosis. The course of the disease is very slow; after a stationary period of from one to two months improvement begins and depends on the amount of involvement. Some patients never get well.

Treatment. Withdraw alcohol gradually till total abstinence is attained. Deception and secret drinking should be watched for; the condition of the heart is the best guide in the withdrawal of the alcohol. Rest in bed, and careful diet with warm application to the limbs are necessary. Correct posture is essential to prevent deformities. Some form of hypnotic or analgetic must be used to alleviate pain. In the use of morphine and cocaine great care is necessary because the condition is of such long duration. I have seen many opium and cocaine fiends who got these habits while treated with morphine or cocaine for an attack of alcoholic neuritis. Electricity to paralyzed muscles to maintain nutrition should be resorted to. Whether electricity applied to the nerves hastens regeneration is still *sub judice.*

Before approaching the subject of alcoholic insanity, it will not be amiss to say a few words on the subject of alcohol and heredity.

Forel, of Switzerland, showed that alcohol injured the germinative cells, and he called this phenomenon "blastophtorie." Animal experimentation proves that chronic alcoholic intoxication of the male leads to the production of defective offspring. Simmonds, of Hamburg, in 1898, reported azoospermia in sixty per cent. of males addicted to chronic alcoholism. Bertholet (*Zentrallblatt für allgemeine Pathologie,* xx, p. 1062, 1909) examined the testicles of seventy-five men whose history as to alcohol was unknown, and thirty-nine men who were habitual drunkards, and most of whom died before they were fifty years old. In all but two of the thirty-nine cases he found more or less atrophy of the parenchymatous elements and an increase of interstitial connective tissue, these changes differing from ordinary senile involution. Perhaps the most frequent cause of mental degeneration in the offspring is alcoholism in one or both parents. The abuse of alcohol induces definite tissue alterations mostly noticeable in the nervous system. As a result the children of such progenitors are ever prone to epilepsy, hysteria, and grave mental disorders, and should the tendency increase in succeeding generations to a pronounced degree the family will soon die out. It is a well known fact that drunkenness on the part of both parents at the time of copulation is one of the most certain causes of idiocy. There are many notable exceptions to this rule, as Griesinger long ago observed; genius and idiocy go hand in hand, and after all genius is but a one sided psychic development, as is notably illustrated in the family history of Byron with his insane and suicidal ancestry and his own tendency toward psychopathy.

Carefully drawn statistics of 4,000 criminals taken from the Elmira Reformatory show that drunkenness existed in the parents of thirty-eight per cent. and probably more. Marro finds that on an average forty-one per cent. of the criminals he had examined had a drunken parent. By far the most exhaustive and careful study of the effect of heredity in transmission of crime has been *The Jukes* (A study in crime, pauperism, disease and heredity), by R. L. Dugdale, New York, 1877. The ancestral breeding place of this family was in a rocky, inaccessible spot on the frontier of New York, where they lived in cabins. The ancestor of this family was born of the early Dutch settlers between 1720 and 1740, a hunter and fisher, *a hard drinker,* jolly, and companionable, averse to steady toil and working only by fits and starts. He lived to an old age, when he became blind, and dying left an enormous illegitimate progeny, and five daughters. Two of his sons married illegitimate sisters. These sisters were the "Jukes." The descendants of these five sisters have been carefully traced through five subsequent generations, the number of individuals thus traced being 709. The real aggregate of this progeny is probably 1,200. Of the 709, seventy-six were criminals. Of the females, more than half were prostitutes (or 52.4 per cent.; the normal average has been estimated at 1.66 per cent.), and it has been estimated that, during this period the "Jukes" family cost the State $1,250,000, not to mention the awful legacy of crime and criminals which they also left behind them.

ALCOHOLIC INSANITY.

Ætiology. Those who yield to the alcoholic habit, and become its slaves are usually individuals who inherited neuropathic tendencies or who acquired such neuropathic constitution in later life. Some go at it when they are convalescing from a severe attack of typhoid or pneumonia or are recovering from a severe physical injury; some use the cup to drown their sorrows of financial losses or domestic infelicity; others begin their alcoholism during certain physiological crises, such as menstruation, lactation, etc.

Alcoholism according to William White is apt to be an early symptom in general paresis, and often is prominent in the recurring maniacal attacks of circular insanity.

Symptomatology. The first stage of the disease is that of acute drunkenness, and this manifests itself in the form of illusions, delusions, and hallucinations. After these if the alcohol is still continued, the individual travels downward to complete mental and physical decay. The physical decay is evidenced by such symptoms as accompany alcoholic myocarditis, cirrhosis, gastritis, nephritis, and arteriosclerosis; the mental decay by disturbances of sensation, motion, and intellect. There is to be found paræsthesia, hyperæsthesia, hyperalgesia, and anæsthesia usually occurring in patches; the special senses become involved as seen by amaurosis, tinnitus aurium, and diplopia. Motor disturbances follow next, and we get spasms, cramps, epileptiform attacks, and finally paresis. The changes in the intellect are gradual and progressive, the judgment is overthrown, the moral sense is perverted, delusions particularly of marital infidelity and jealousy develop, and the patient finally sinks into a condition of permanent mental enfeeblement. Continued indulgence in alcohol may give rise to other psychoses; thus, we have acute mania, which differs from delirium tremens in the fact that the latter is rather an acute hallucinatory confusion in which the impairment of consciousness is more marked than in mania. We may also get acute alcoholic melancholia. These do not present any distinctive features except that they are sudden in their onset, just as sudden in their disappearance, and of rather short duration.

A common form of alcoholic insanity is that with depressive delusions, known as chronic delusional insanity; in a short time the patient gets delusions of persecution, hears voices of reproach, sees unclean beasts, and is tormented by devils. This drives him into profound melancholia, which may lead to suicide or murder. According to Spitzka, the delusions of chronic alcoholism almost always relate to the sexual organs or to poisoning. Dr. F. Lenz describes a type of alcoholic insanity with expansive delusions and hallucinations of sight and hearing, which, in most instances, relate to God and the future state. There are other less frequent types of alcoholic insanity such as paranoia, automatism, double consciousness, and spontaneous somnambulism which are later followed by amnesia.

Kraepelin considers what is known as the Korsakoff psychosis the most characteristic form of alcoholic insanity. The chief features of this psychosis are disturbances of memory. In relating past events these patients wander off into endless repetition and under the influence of delusions add thereto most improbable and impossible occurrences. (*Merkstörungen und Erinnerungsfälschungen.*) The psychosis is also accompanied by polyneuritis.

Neurasthenia and hysteria may both occur as a result of alcoholism. The term dipsomania is employed to designate a chronic periodical impulse to drink.

Chronic alcoholism whether interrupted or not by any form of mental disturbance tends to an ever increasing dementia, alcoholic dementia, in which all the phases of insanity previously described make their appearance, and to which apoplectic attacks are superadded.

Pathology. Besides the classical changes in the thoracic and abdominal viscera and bloodvessels one finds chromatophilia, swelling of the cell bodies, and thickening of the nuclear net work in the brain. Ewing found extreme chromatolysis in the spinal medullary and cortical stichochromes. The walls of the bloodvessels of the brain are degenerated and present irregular bulgings; the intraadventitial lymph spaces are obliterated and the capillaries are plugged with leucocytes.

The treatment is the same as that of other insanities in which isolation, confinement, and feeding play the most important rôle.

THE RELATION OF ALCOHOL TO LEGAL MEDICINE.

A knowledge of this subject is of great importance to the general practitioner, for it is he, and not the insanity expert who sees the alcoholic patient. In cases of life insurance, will contests, fraudulent conveyances of property, etc., that come to court, the attending physician is the most competent witness as to the physical and mental condition of the litigants. The expert in most cases is only called upon to give his conclusions upon a certain definite statement of facts, which have been brought out in the evidence. This is known technically as answering a "hypothetical question." It is the testimony of the attending physician as to that statement of facts which makes the evidence in the case. Juries know that in our present system experts are paid by the litigants, and they look upon expert opinion as something that can be brought to fit into the case. The appellate courts in reviewing a case also tend to pay greater attention to the testimony of the attending physician than to that of the expert, because what the courts want is to know what the witness saw or heard and not what he thought, and there is no better evidence as to whether or not the deceased whose will is being contested was drunk or not, when he made his last will, than that of the physician who was treating him at the time.

Leaving out all details of diagnosis of alcoholism, the attending physician on the stand, in almost every case, will be asked whether the defendant was drunk, and *if* drunk, whether he was so drunk that he did not know what he was doing, and if he did know what he was doing, whether he knew that the act which he committed was wrong. This is known as the rule in the McNaghton case.

The common law holds that voluntary drunkenness is no excuse for crime. Drunkenness is not an excuse for crime, but it is a material fact in arriving at a conclusion whether or not the defendant had the *intent* to commit the crime, both *intent and act* being necessary in criminal law before a crime can be proved.

To give an idea how far the courts go in differentiating merely being drunk from being so drunk as to be actually insane, I will quote the charge of Judge Stephen to the jury in Regina *vs.* Davis, Newcastle Assizes, 1881, reported in *14 Cox 563*. In this case the defendant was charged with having stabbed his sister and killed her while he had an attack of delirium tremens. The court said: Drunkenness is one thing, and the diseases to which drunkenness leads are different things; and if a man by drunkenness brings on a state of disease which causes such a degree of madness, even for a time, as would have relieved him from responsibility if it had been caused in any other way, then he would not be criminally liable. In such a case the man is a madman and is to be treated as such, although his madness is only temporary. If you think he was so insane, that if his insanity had been produced by other causes he would not be responsible for his actions, then the mere fact that it was caused by drunkenness will not prevent it having the effect which otherwise it would have had of excusing him from punishment. Drunkenness is no excuse, but delirium tremens caused by drunkenness may be an excuse if it produces such a state of mind as would otherwise relieve him of responsibility. A person may be both insane and responsible for his actions and the true test is really the rule as laid down in McNaghton's case. The jury on this charge acquitted the defendant.

Our own legislature has adopted the law as laid down in McNaghton's case. The New York Penal Laws have the following provisions relating to alcoholism. "No act committed by a person while in a state of voluntary intoxication shall be deemed less criminal by reason of his having been in such condition. But whenever the actual existence of any particular purpose, motive, or intent is a necessary element to constitute a particular species or degree of crime, the jury may take into consideration the fact that the accused was intoxicated at the time in determining the purpose, motive, or intent with which he committed the act."

"A physician or surgeon or person practising as such who while in a state of intoxication administers a poisonous drug or medicine, or does any other act as a physician or surgeon, to another person without intending to kill him, but which produces the death of the latter, is guilty of manslaughter in the second degree."

"Any person who, being employed upon any railway, regulating or running trains upon a railroad, or being employed on a vessel propelled by steam, is intoxicated while engaged in the discharge of any such duties is guilty of a misdemeanor."

"An habitual drunkard who abandons, neglects, or refuses to aid in the support of his family is a vagrant."

"A person who has contracted an infectious or other disease while drunk and requires charitable aid to restore him to health is a vagrant."

Contracts. Modern law places a drunken person, in respect of his capacity to contract in the same position as an insane person. If his drunkenness is so excessive as to render him incapable of comprehending the nature and effect of his contract, it is voidable at his option, and it is immaterial that his drunkenness was voluntary and not procured through the other party to the contract. In the absence of fraud slight intoxication does not affect the validity of a contract. It must be so excessive as to render him incapable of knowing what he is doing. The contract, though voidable at the option of the drunken person, is binding on the other party, and cannot be attacked by third persons. If, however, by weight of authority, a committee has been appointed for the habitually drunken person, his contracts are absolutely void, except for necessaries. A drunken person is liable on contracts created by law or quasi contracts, and is liable for necessaries furnished to him. A drunken person may ratify the contract or avoid it; if he avoids it he must return the consideration which he received, but in some jurisdictions, if he wasted the consideration, this will not be required. A drunken person, as I said before, is liable for necessaries, but only for their real value and not for the price agreed upon.

Torts. A tort is a wrong independent of contract, and not a crime, such as fraud (not criminal), negligence, etc. The fact that a tort was committed during intoxication is no excuse whatever. So held in actions for slander. It is conceivable, however, that the amount of the recovery might be considerably affected by showing that the wrong was committed under such conditions that no one would have been likely to attach importance to his utterances.

Wills. The physician is frequently a vital witness in will contests, where the question of testamentary capacity in the deceased is involved. The test is about the same as in other mental disabilities. 1. The testator must be shown to have understood the business that he was engaged in; and 2, the testator must have been able *without prompting or assistance* to summon before his mind the property he wishes to dispose of and the persons who are the natural objects of his bounty, and must have been able to retain these in his mind long enough to arrive at a rational conclusion.

1. A will made during an attack of delirium will be thrown out. 2. To throw out a will of a man who was drunk at the time of making the will, the contestants must prove by medical or lay or both kinds of witnesses, that the testator was so drunk that he did not know what he was doing. 3. If the contestants prove that the testator was an inebriate, the will will be thrown out, as it also will if they can prove that at no time did he know what he was about.

Insurance. The relation of alcohol to life insurance is shown by the rules of some life insurance companies which provide that they are prohibited from insuring the lives of those engaged in the manufacture or sale of malted or spirituous liquors. Most of the applications contain warranties that must be signed by the applicant that he is not intemperate. If that warranty is broken the policy is forfeited. The United States Supreme Court, however, held that when a man answered that question in the negative and the company proved that he had had one attack of delirium tremens before he took out the policy, the warranty was not violated. Some companies want to know the exact number and the nature of the drinks that the applicant takes a day. Accident insurance policies frequently contain the provision that the policy does not cover injuries sustained while intoxicated. The statement that the applicant is of temperate habits does not mean that he totally abstains from drinking wines and liquors. A statement of habits is one of fact and not of opinion; in any case of doubt this question is one for the jury.

These are the main points in connection with alcohol and its relation to legal medicine. In conclusion, I wish to say, that widespread movements are now in progress both abroad and in this country concerning the disposition of the alcoholic "rounder." In Europe public lectures on the baneful action of alcohol on the body are given. Heartrending scenes in family life brought about by the abuse of alcohol are pictorially represented. In this State, however, both the public and authorities are woefully indifferent as to the disposition of this unfortunate class of patients. The only law there exists concerning him is to lodge him in jail. Millions are spent annually to eradicate infectious diseases; great stress is laid on the prevention and treatment of bubonic plague and pellagra; most sumptuous sanatoria are constructed to harbor persons afflicted with the "white plague"; yet the damage inflicted physically and economically by alcohol is far greater than that inflicted by all the infectious diseases put together.

Jails, workhouses, and penitentiaries in this State cost millions to maintain, and these harbor criminals, sixty per cent. of whom owe their origin in crime to alcohol; yet to the shame of us physicians and citizens of the Empire State we have no provision such as a "Home for Inebriates" to treat scientifically and intelligently these alcoholics before they become criminals. The rich man goes to a sanatorium; the poor man cannot go to one and instead of being sent to a "Home," like his tuberculous or leprous brother, he is regularly railroaded to jail, where if he does not succumb to an attack of delirium tremens, on account of lack of facilities for the treatment of this condition, he begins to associate with other criminals, and is himself, in time, graduated a "full fledged" crook, a shame to his friends and relatives and a burden to the citizens and taxpayers of his State.

Since this article was written our legislature has passed a bill for the establishment of a "Home for Inebriates." This bill in its due course came to the mayor for his approval, and after hesitating for a while, he signed it, and sent a memorandum to the governor of the State, stating that in his opinion a home for inebriates was not necessary; that we had in this State two such homes, and that both of them had to be be closed up on account of lack of patients; he also asserted that drunkenness had decreased in the last thirty years. I have no statistical data to contradict the mayor on this last proposition, but I will say that one has only to go through the city hospitals, jails, station houses, and insane asylums to be convinced of the fact that drunkenness does exist, and constitutes, roughly speaking, more than thirty per cent. of the clientèle of these institutions. Every one conversant with the management of public institutions will have to admit that the cost of maintaining a well regulated and scientifically conducted home will be much less than it is at present in the respective asylums and jails. That the ultimate result will be far superior, no one can doubt.

The bill in my opinion has other drawbacks: 1. It is not mandatory but permissive. It is to be a municipal institution and not a State institution. The permissive character of it leaves the establishment of the home in great part to the discretion of the Board of Estimate. Should that honorable body exercise its discretion and establish such a home the complicated system of parole which is at the basis of this bill would open an extensive field for graft for unscrupulous politicians, and the sufferer in the end would be only the inebriate whose welfare the real sponsors of the bill must have had in mind.

264 EAST SEVENTH STREET.

A PLEA FOR A MORE VIGOROUS CAMPAIGN AGAINST THE MALARIAL FEVERS.*

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In the presentation of this paper it is not expected that there will be anything original offered for the prevention of the malarial infections, but it is the earnest hope of the writer that he may stimulate an interest that will result in a decrease of the scourge that constitutes such a large percentage of the morbidity in our southern States.

In his work on *Practice*, Osler says: "In the discovery of Laveran there lay the promise of benefits more potent than any gift the laboratory had ever offered to mankind—viz., the possibility of the extermination of malaria. By the work of Manson, Ross, and others, this promise has reached the stage of practical fulfilment, and one of the greatest scourges of the race is now at our command." This statement was made some years ago, but although evidence accumulates, showing us that this infection can practically be wiped off the face of the earth, it is an unfortunate fact, that there has been little decrease of the disease in this and other southern States during the past decade. This statement can be borne out, by reference to *Mortality Statistics*, issued by the Bureau of the Census, at Washington, which not only shows that there has been practically no decrease in the morbidity from this cause, but that the deaths in the registration area exceed a thousand year after year, and continue to remain at about the same figures. When it is taken into consideration that all vital statistics concerning the south are sadly deficient in value, owing to the fact that our entire rural district is not included in the registration area, remembering that malaria is most prevalent in the country districts, and that its relative mortality to the number of cases is a minimum, is it not evident what an immense foothold the disease has in our country? Should we not make a more determined effort to eradicate this infection, not only as individuals, or even as a profession, but as a nation?

Let us review some of the results obtained in other parts of the world, following a systematic campaign against the infection. Of special interest to the American people is the work carried on during the past few years in the Panama Canal Zone. Under the splendid leadership of Colonel William C. Gorgas the prevalence of the malarial infections has been markedly reduced, the number of cases occurring annually per one thousand population being reduced from 821 in 1906, to 215 in 1909, and the deaths from seven to one for each thousand population.

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*Read at the annual meeting of the Florida State Medical Society, Jacksonville, April 6 to 8, 1910.

The results of the findings of the Italian Society for the Study of Malaria give further evidence. In 1901 there occurred in that country 13,861 deaths from malaria, this mortality has gradually been lessened, in 1906 the number being 4,871 or a reduction of sixty-five per cent. Deaderick states that in Ponte Possero and Uniti previous to 1902, over sixty per cent. of the population were yearly attacked, with a properly constituted campaign commenced in that year, this enormous rate has steadily been reduced, reaching in 1907 the low mark of two per cent. Craig cites the showing made at Ismalia, a town of 6,000 inhabitants upon the Suez Canal, where in 1900 there occurred 2,250 cases, in 1901 1,990, and so on down until 1905 when but thirty-seven cases occurred, or practically an annihilation of the disease. These are but a few of many instances, all a matter of public record, of the results that have been attained following a systematic warfare against this disease. Why should we not organize our forces, make use of our resources, and institute such a campaign in the South?

To be thoroughly able to combat an infection a clear understanding of its ætiology is essential, and while the successful invasion of the malarial parasite in man depends wholly on the individual being bitten by infected anopheles, there are other conditions that require attention in the prevention of malaria. The disturbing of virgin soil has in many instances resulted in epidemics of malaria in districts that were previously largely immune to the infection, but, as Manson tersely remarks, "soil disturbance usually implies the formation of holes, holes imply puddles, and puddles imply mosquitoes." Again, it has long been known to inhabitants of the tropics that sleeping on the ground, or at low elevations, resulted in chills and fever. In highly malarious countries the natives have learned that they secure a marked immunity by sleeping on beds raised some distance from the ground. This is easily accounted for with our knowledge of the flying habits of the mosquito, their natural habitat being at low elevations, and rising but a few feet from the ground.

The prophylactic measures, and methods to stamp out the infection, may be classed as follows:—First: The education of the public that the mosquito is the ætiological factor in malaria, its habits, and how to protect against it. Second: The destruction of the mosquito in its larval and adult stages. Third: The prevention of the development of the plasmodium in man. Fourth: The entire eradication of the parasite from an infected blood stream, with isolation of the infected individual, in so far as possible.

The education of the public on the mosquito as the ætiological factor in malaria, its habits, and how to protect against it. In this most important initial step in fighting malaria, care should be taken to explain away the many popular theories of the ætiology of the disease, remembering that but a few years ago we were ourselves harboring many of these delusions. Craig, in his work on *The Malarial Fevers,* in discussing what the Italian Society for the Study of Malaria has done in reducing the disease in that country, says: "There is probably no one so ignorant in that country as to doubt the efficiency of the methods already instituted for the suppression of malaria, or one who does not know why they were instituted, and how they are proving successful." We must not only establish the mosquito as the cause of malaria, but show how it is the only means by which we can contract the infection. We must explain that protection from the mosquito must be absolute, the benefits of sleeping under mosquito bars and the screening of the home are largely discounted if the family remains on an unscreened porch during the earlier evening hours.

Exposure to the rains, the sun's rays, and excesses of all kinds, the sojourner in malarial territory is warned against by the writers of even today, but it must be remembered that while recurrences of old infections can be brought on by any of these means, that the worst they can do of themselves in bringing on original infections, is by decreasing the natural powers of resistance, and that even with the grossest neglect of any or all of these, a primary malarial infection cannot occur without the anopheles as a transmitting agency.

It is not uncommon to hear from the laity that such and such a place is swarming with mosquitoes, "yet there is no malaria." We must explain that it is only certain species of the mosquito that transmit malaria, and that there are many species perfectly harmless in so far as we know. Houses and verandas must be effectively screened. Where occupation calls one out during the evening or night hours, protection should be maintained by the wearing of head tents and gloves. By this method the night workers in Italy have secured a marked immunity.

Quinine prophylaxis will be discussed later on, but the education of the public in the prevention of malaria is not complete without a full knowledge of this adjuvant, and the great benefits that have been derived by this method.

The destruction of the mosquito in its larval and adult stages. This can be accomplished by methods aimed toward the destruction of the larvæ, which include drainage, the filling in of low lands, and the use of certain chemical substances familiar to all sanitarians. In regard to the drainage of lands situated too low to allow standing water to run off, it has been found where such conditions exist near tide water, that very effective work can be done, by digging ditches, allowing the water to overflow these low areas at high tide. A very interesting piece of work has recently been carried on at Fort De Soto, an artillery post on Mullet Key, at the mouth of Tampa Bay. This place was said to be one of the worst in this country, and on account of the mosquitoes, military routine and all outside work had to be suspended during certain months. Various estimates in past years, for the funds necessary to correct this nuisance have ranged as high as three hundred thousand dollars, but during the past year, the condition has been improved seventy-five per cent. on an expenditure of six hundred dollars, the only work required, being the digging of ditches, allowing the tide to ebb in and out, thus destroying the breeding places of the mosquito.

Experimental work has been carried on with the use of larvæ eating minnows, the success attained has, however, been rather limited. Under certain conditions malaria is entirely stamped out of a community by drainage, and as the result of the progress of civilization. Instances of such are common enough on this continent.

The anopheles do not, however, confine themselves in choosing breeding places that can be reached by these methods. Under the right conditions they will breed upon the edges of large natural bodies of water. Where such conditions exist, work must be concentrated upon the destruction of the adult mosquitoes, accompanied by absolute protection to the populace against the bites of the pest.

It is an interesting fact that malaria has disappeared from many sections of the world where it was formerly quite rife, although the anopheles are still present. Great Britain is a marked illustration of this phenomena. Christopher and Stephens draw attention to certain localities in India that are free of malaria, in spite of the presence of the anopheles, and that adjacent territory is highly malarious. Celli tells us of similar conditions existing in Italy. There are two possibilities that may account for this phenomena. Sambon offers in explanation the possibility of the existence of hyperparasitism, that is the destruction of one parasite by another. Manson suggests that the anopheles may be feeding on some vegetable juice that is poisonous to the malarial parasite. If later research work should result in the establishment of the verification of the latter, the prevention of malaria will become still further simplified.

The prevention of the development of the plasmodium in man. As the life cycle of the parasite needs man for its completion, it is obvious that if conditions are such that the plasmodium cannot develop in man's circulation, malaria cannot exist. Celli says: "He who takes quinine every day, and therefore has always a supply of quinine in the blood stream, can undergo with impunity inoculations of blood full of malarial parasites, and can expose himself with little or no danger to the bites of infected mosquitoes." In considering, therefore, the prophylaxis of malaria, quinine is an important aid in preventing the ingress of the parasite in man. The authorities differ largely as to the best manner in which quinine should be taken for this purpose. The single dose of from ten to fifteen grains at intervals varying from every fourth to every twelfth day, has many advocates, while others favor the smaller dose of three or four grains taken daily. The writer used the last method with very satisfactory results, on a large body of soldiers in the Philippine Islands. It has the advantage at least of soon becoming a fixed habit, while the taking of a single dose every fourth, sixth, or eighth day is very apt to be overlooked, and not taken on the days that it should be. Italy from whom we can learn a great deal in the prevention of malaria, has profited largely from the issue by the state of quinine, selling it to those who can afford to pay for it at a minimum price, while the poor have the drug furnished them free of charge.

The importance of absolute protection against the mosquito has already been discussed.

The entire eradication of the parasite from an infected blood stream, with isolation of the infected individual, in so far as possible. As every additional case of malaria in a community increases the danger of a further spread of the disease, every effort should be made to destroy the protoplasm as soon as possible. Treatment should therefore be carried on until such time as the infection is entirely eradicated. This cannot be accomplished in a few days, several weeks and sometimes months of treatment being necessary to effect a complete cure.

Care should be taken to protect the patient from mosquitoes, 1, for the purpose of confining the infection to the party infected; 2, to prevent the infection of previously noninfected mosquitoes; and 3, as protection to the infected party from infection with other groups of the parasite.

Too many patients with malaria are treated in such a manner that we have gamete carriers constantly present as sources of infection. It has been said that mosquitoes do not give malaria to man, but that man gives it to the mosquito. Until recently it was maintained that quinine had little effect on the sexual forms of the æstivoautumnal and tertian parasites. In a series of experiments conducted in the Panama Canal Zone, however, Darling demonstrates conclusively that quinine, thirty grains daily, will entirely destroy the gamete. He quotes many cases showing in one nine crescents to every 100 leucocytes on the first day, five on the second and third days, four on the fifth, one on the sixth, and none on the eighth or ninth day when the patient was discharged. In another case crescents were reduced from ninety-two to every 100 leucocytes, to one to every 100 in fifteen days, while in another case where quinine was withheld, crescents remained constantly for twenty-three days, there being sixteen crescents to every 100 leucocytes on admission, and twenty at the end of the period. He conducted in all forty-seven experiments, and concluded, that "a patient with more than one crescent for every 500 leucocytes is infective, and that ten grains of quinine, three times a day, will reduce these forms to a noninfectious medium, in from a few days to two or three weeks."

There should be but one rule in any of these malarial infections, that is the liberal use of the specific, until such time as repeated blood examinations give negative results. A single negative examination should not be considered as satisfactory proof of the eradication of the infection, the patient should be under laboratory observation for at least two weeks after the first negative examination of his blood has been secured.

In the foregoing, the classification of methods for the prevention of this disease have been taken up in the order of their relative value in the eyes of the writer. We as physicians do not do our full duty unless some organized effort is made by us to correct existing conditions. Under a military régime or with a central government, such work as is necessary can be carried on with greater success, than with a government such as ours. If legislation now pending in Congress toward the establishment of a National Bureau of Health becomes operative, we may look for some Federal assistance, but work done by our Federal government has necessarily to be largely in the way of investigation and recommendation. The great work of detail must, of necessity, be carried on by the separate States, and the required authority and means to carry on such work be given by our State governing bodies. Such action will never be taken unless the medical profession take the initiative. I would, therefore, suggest that this society appoint a special committee to take up this matter of the prophylaxis of malaria, recommend some plan of action, and work to secure what legislation may be necessary to carry out such plans as may be feasible. While much more should and, I think, can be done, we can at least carry on a campaign of publicity. Little can be done without the full knowledge and understanding of the laity. When they know and fully appreciate the value of these prophylactic measures, they will soon demand and carry out such measures as are necessary for the destruction of the malarial carriers, they will secure for themselves where this cannot be done, absolute protection against these carriers, so that with the proper and efficient treatment of such cases as may occur, malaria will soon be reduced to a minimum in our morbidity and mortality tables. But that work by the laity will be done only after we have done our part in placing the matter intelligently before the State governing bodies.

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Therapeutical Notes.

Applications for Inguinal Intertrigo.—Sabouraud is cited in *Bulletin générale de thérapeutique* for August 23, as recommending the application of the following preparations in the treatment of the chafing of the skin so commonly found in the inguinal region:

℞ Tincture of iodine, ...ʒv;
Compound spirit of ether, ...℥i.
M. et Sig.: Apply lightly by means of absorbent cotton rolled into a pencil form and soaked in the liquid.

The foregoing paint is allowed to dry for an instant, when a light application of the following ointment is made.

℞ Calomel, ...gr. iv;
Tannic acid, ...gr. iv;
Petrolatum, ...℥i.
M. et Sig.: Apply lightly once a day, and afterward dust with talcum.

Applications for Toothache.—In the *Nord médicale* for September 1, 1910, a number of dental formulas are published, most of which are intended for the relief of odontalgia. The necessity of calming the pain before proceeding with measures to overcome special conditions is referred to. The treatment of symptoms must, of course, vary according to the cause of pain. If the pain is due to periostitis, soothing antiseptic mouth washes should be employed containing about one grain of chloral in each drachm; either mucilage of sassafras, or elm; decoction of marshmallow or poppy heads may be used as the base or vehicle. Good results are also obtained by painting the gums night and morning with one or other of the following mixtures:

I.

℞ Tincture of iodine, }
Tincture of aconite, } ....āā ʒiiss.
M.

II.

℞ Tincture of iodine, ...ʒi;
Tincture of aconite, ...ʒi;
Crystalline synthetic guaiacol, ...ʒss.
M.

III.

℞ Tincture of iodine, ...ʒiss;
Tincture of aconite, ...ʒiss;
Chloroform, ...ʒi.
M.

In most cases the pain has its origin in caries of the teeth with pulpitis. It is important to first clean out the cavity as completely as possible and then apply one of either of the following solutions on a pledget of cotton:

I.

℞ Tincture of benzoin, ...ʒiiss;
Oil of cloves, ...♏xlv.
M.

II.

℞ Solution of formaldehyde, U. S. P., ...ʒiiss;
Oil of geranium, ...♏xxx.
M.

III.

℞ Chloroform, ...ʒiiss;
Creosote, ...ʒiiss;
Tincture of opium, ...ʒiiss;
Tincture of benzoin, ...℥i.
M.

IV.

℞ Chloral hydrate, ...gr. lxxv;
Cocaine hydrochloride, ...gr. xv;
Pulverized camphor, ...gr. lxxv;
Alcohol, ...gtt. x.
M.

V.

℞ Tincture of benzoin, ...ʒiss;
Chloroform, ...ʒi;
Carbolic acid, crystals, ...gr. xxx.
M.

Or the cavity may be filled with a paste of the following composition:

℞ Cocaine hydrochloride, ...gr. 1/7;
Morphine hydrochloride, ...gr. 1/7.
Oil of cloves, sufficient to make a paste.
M.

Hexamethylenamine in Poliomyelitis.—In a letter to the editor of the *Journal of the American Medical Association*, Robert P. Preble suggests the use of hexamethylenamine, U. S. P., in the treatment of epidemic anterior poliomyelitis. He remarks that there can no longer be any question as to the nature of this disease, undoubtedly an infection localizing in the spinal canal, and goes on to say that the well established fact that hexamethylenamine is excreted or secreted in the cerebrospinal fluid suggests its possible use in this disease. He has seen two instances of this disease, shortly after the onset of paralytic phenomena, in which he gave large doses of urotropine (hexamethylenamine). In neither instance did the paralysis extend and both patients made good recoveries. While he admits that nothing can be concluded from such an experience, yet in view of our desperate helplessness in such cases, a drug, backed as hexamethylenamine is by some experimental work, may be tried.

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PROPRIETARY MEDICINES.

The attitude of the German medical man toward the question of proprietary rights in medicines seems to be quite different from the ostensible attitude in the United States, and the difference which is possibly due, in part at least, to the basic difference in the laws under which protection of proprietary rights is accorded in the two countries. In the United States such protection is acquired in one of three ways—by patenting the product itself, by patenting the process by which it is made, or by copyrighting the name under which it is sold. If the process or the product is patented, protection is afforded for a term of seventeen years, but at the end of that time the process and the product both become public property, and, under the rulings of the court in the Singer case, any copyrighted name which is used to designate the product also becomes public property.

This principle has been recognized in the case of antipyrine, a substance which was patented under this copyrighted name in the United States. When the patent on this substance expired, several firms put a somewhat similar product on the market under the name of antipyrine in competition with the original maker of antipyrine and owner of the copyright name. If, however, the maker of a product does not patent either the product or the process, but merely gives to it a copyright name, he is, under the present law, assured a permanent control under that name. Even if some one should discover his methods of manufacture and market the same article, he could not use a copyrighted name, as this would, under the ruling of our courts, constitute unfair competition.

In Germany, on the other hand, the manufacturer is not permitted to take out a patent on any product of medicinal value. He is permitted to take out a patent on any process which he may devise for making such a product, but any other manufacturer may make the same product, provided he can discover some other method of doing so than that patented by the originator, and may call it by the arbitrary name assigned to it by the originator, provided he affixes his own name as maker and does not convey any erroneous impression regarding the actual manufacturer of the goods. Thus we have in Germany half a dozen makes of phenacetin, though we have only one in the United States. This difference in the laws and usage of the two countries regarding the question of patent protection may, as intimated, explain to a certain extent the difference in the attitude of the medical practitioners in the two countries toward proprietary preparations.

As a matter of fact, American physicians are, on the whole, not very averse to the use of proprietary preparations, as is abundantly testified by the enormous amounts of these products which are sold. But the interpreters of the "ethics" of the calling decry proprietary medicines to such an extent that physicians using them hesitate to publish reports setting forth the results obtained, while medical journals frequently decline valuable articles in which proprietary medicines are named, merely because they fear being accused of interested motives in publishing them. In Germany, on the other hand, neither authors nor editors seem at all adverse to the publication of reports commendatory of proprietary preparations.

The German chemist defends the practice of protecting his proprietary rights in any medicine discovered on the ground that, unless he is afforded some such protection, it will be impossible for him to carry on his research work. Ehrlich's new remedy, for instance, is the six hundred and sixth new compound prepared and experimented with in Ehrlich's laboratory. If the processes and product discovered after six hundred and five trials, each involving much time and labor, are made public property, any manufacturer can enter into competition with the originator without sharing any of the expense involved in the six hundred and five studies which led up to the ultimately successful process. The chemist says that the surgeon who has achieved fame through years of labor and practice is not censured for exacting fees ranging up to fifty thousand dollars for tasks requiring only a few hours or even a few minutes to perform. The chemist can hope to receive his reward only by establishing some form of proprietary control over the results of his labors.

THE EHRLICH REMEDY FOR SYPHILIS.

A correspondent who is now on his way back from Frankfort, where he saw a good deal of the treatment with "606," writes to us that it shows striking results in many cases, no matter in what stage the disease is, from the primary sore to tertiary forms. In some instances, he says, the pain lasts for several days, and he adds that Dr. Treufel, of the Krankenhaus zum heiligen Geist, of Frankfort, thinks it important that patients should remain in bed for some days after the injection. He states, further, that the remedy has been applied with good effect to the chancre itself in cases in which its healing had not been promoted by the injection. The amount to be injected is regulated by the sex, the weight, and the general condition of the patient. Multitudes, of course, are clamoring for the drug, but Professor Ehrlich has caused the following notice to be posted: "Präparat 606 kann wegen Materialmangel vorläufig nicht abgegeben werden."

Another correspondent in Germany informs us that Professor Ehrlich has produced an improved preparation of considerable less toxicity than his "606," to which he has given the name of "Ehrlich Hata Hy.," or hyperideal, which is being used with considerable success. This correspondent also informs us that the medical profession in Germany has been very much exercised in regard to the publication of reports in the daily papers on the value of Ehrlich's remedies in advance of their appearance in professional journals. Further, an advertisement has appeared in the *Berliner Tageblatt,* a lay newspaper, by a doctor, announcing treatment with the new preparation and advertising the dates of his presence in different German towns to meet patients by arrangement. It is possible, of course, that this practitioner is advertising without authority and that he does not have the supplies which he pretends to have. In fact one physician in Bucharest has been arrested on the charge that he received large sums for the treatment of patients with 606, whereas he had none of the remedy.

The ethical aspects of the practice of medicine in Germany are looked after by associations, or boards, whose duties are similar to those of the "courts of honor" to which are referred quarrels between officers in the German army. The board of the Berlin Medical Unions, which acts in this capacity for the physicians of Berlin, proposes to hold a discussion on the following propositions: 1. Remedies which are under therapeutic trial should be submitted only to hospitals and clinics and not to doctors in private practice. 2. Doctors should refrain from publishing their observations on the use of new remedies in the daily press.

Dr. Plonski, in the *Berliner Aerzte-Correspondenz* says that the new preparation seems destined to effect a revolution in the ethics of the profession. He further says: "I am not giving any secrets away when I state what has even appeared openly without contradiction in the daily press, that many physicians have made enormous sums out of the use of 606 in their private practice. These colleagues are thereby enriching themselves at the cost of the rest of the profession, which is not in a position to apply the new remedy, and they are offending against a fundamental postulate of good fellowship." It will be seen that the advent of this remedy bids fair to create as much dissension as was caused by the presentation of tuberculin to the public by Dr. Koch, if not more.

AN EFFECTIVE HYGIENIC HINT.

A representative of this journal lately spent a few days in the attractive city of Syracuse, N. Y., the occasion of his presence there being the annual meeting of the American Association of Obstetricians and Gynæcologists. He was housed in a new hotel. Much might be said of the beauty of the house and of the excellence of its management, but it is our present purpose merely to mention a feature which seems to be unique in our great hostelries. Not a spittoon or a trash basket was anywhere to be seen in that great room known as the office, but nobody spat upon the floor or threw a cigar butt or so much as a scrap of paper upon it; the tiling was scrupulously clean at all times.

Our representative was at first amazed, but he soon interpreted the situation as the outcome of a purpose on the part of the manager of the house to try hinting to its patrons that cleanliness was taken for granted rather than irritating them with printed signs declaring that spitting upon the floor was "unlawful." The docility of the American public is proverbial, but, while almost invariably heeding such injunctions, our people do silently resent them. The late Dr. Henry J. Bigelow, of Boston, once said in a discussion on ethics that he would not remain in a club which had among its rules one to the effect that the members should not steal the spoons; and his statement, we imagine, represents the feeling of many a man when he is confronted with a formal prohibition of some act of which he would on no account be guilty. The sanitary hint has proved effective in Syracuse, where one feels complimented rather than affronted by it; why should it not be tried elsewhere?

THE CERTIFIED OYSTER.

Dr. Herbert D. Pease, of New York, who recently directed a sanitary investigation of the oyster industry in this vicinity, under the authority of the State Board of Health, publishes in the September number of the *Long Island Medical Journal* a paper read by him before the Medical Society of the County of Suffolk. He deals particularly with the subject of the sewage contamination of some of the waters in which oysters are "plumped." While he adduces ample evidence of the agency of contaminated oysters in causing outbreaks of typhoid fever, he thinks it may be found, on more careful study, that the soluble organic matter of sewage can be put to valuable use in oyster culture, but he adds that persons who furnish such products must be in a position to assure those who use them that their possible dangers have been entirely eliminated.

"The certified oyster," he says, "will undoubtedly come," and he foresees that the producer who places before the public oysters "backed by a certificate based upon thorough scientific inspections and control will reap a harvest." "At the same time," he adds, "he will indirectly promote the whole oyster industry on account of the force of his example and the educational influence resulting from his conduct of a great industry in accordance with scientific principles." Dr. Pease cites with apparent sympathy the following verses, by Mr. George C. Whipple, "one of the pioneer investigators of the oyster problems":

A certified oyster am I,
I've neither bacillus nor flea;
No bug doth abide in my flabby inside,
I'm as sterile as sterile can be.

I've neither a pimple nor spot,
I've neither a corn nor a spavin;
I never will rot like a vile floated sot.
Oh! I am an oyster worth havin'.

A GOOD WORD FOR THE "MERE MIXTURE."

Of late years a good deal has been written in exaltation of the "definite chemical compound" and in degradation of the "mere mixture." To this we have never agreed; indeed, we have been at some pains to remark upon the excellence of Dover's powder, the compound cathartic pill, and some other mixtures. We are glad to notice, therefore, that the Council on Pharmacy and Chemistry of the American Medical Association has declined to admit strychnine arsenate into the *New and Nonofficial Remedies* for the very reason that it is a chemical compound. In the report (*Journal of the American Medical Association,* September 24th) Professor Puckner says: "It is both unscientific and irrational to prescribe two such energetic remedies having quite different indications under such a fixed form that the efficient dose of one may involve an unsuitable and perhaps dangerous dose of the other." He closes with the following statement: "A much more appropriate and scientific procedure would be to prescribe the medicines separately or in an extemporaneous pill or solution in which the proportions of the two ingredients could be changed from time to time according to the varying indications in the particular case."

A DISTINGUISHED VICTIM OF THE TYPES.

Everybody connected with a publication office knows what a variety of things may happen to a galley of type after the last proof has been passed upon, but it seems to be by the irony of fate that so precise a writer as Dr. C. S. N. Hallberg, of Chicago, who is now engaged in the revision of the *United States Pharmacopœia* and the *National Formulary,* should be made to appear responsible for such terms as "cataplasmæ" and "unguentum hydrargri diluti" (*Journal of the American Medical Association,* September 24th). We may be sure that he never wrote them, for, allowing "hydrargri" to be an ordinary typographical error, he knows perfectly well that the plural of cataplasma is cataplasmata and that the official name of the ointment to which he alludes is unguentum hydrargyri dilutum.

THE LINE AND THE STAFF IN THE GERMAN NAVY.

Until within recent years the naval service has not been popular among the German aristocracy, who preferred service in the army and carried into the army all the prejudices and practices which were characteristic of the German aristocrat. Latterly, however, the navy is becoming more popular and as a consequence the social life of the service at sea has been materially affected by the influx of officers of noble birth. The latest manifestation of this influence takes the form of a note issued by Admiral von Prittwitz und Gaffron, in command on the Baltic station, touching the social status of staff officers. He reminds engineers, surgeons, paymasters, and other nonexecutive officers, so we learn from the *Army and Navy Journal,* that they cannot expect executive officers and their wives to mingle with them as social equals. They are advised to content themselves with "other than orchestra stalls" at the theatre. He admits that at sea a certain amount of intercourse on terms of equality is unavoidable, but cautions the staff officers that they must conduct themselves with due meekness and humility when brought into contact with line officers on shore. One result of this exaltation of the line at the expense of the staff has been a wholesale resignation of staff officers, including surgeons, of whom there threatens to be a decided lack within a brief time.

News Items.

Congress of Medicine.—The Twenty-seventh German Congress of Medicine will be held in Wiesbaden, on April 19 to 22, 1911.

The Seventh International Dermatological Congress will take place in Rome, September 25 to 29, 1911. The President is Senator Tommaso de Amicis, of Naples, and the General Secretary is Dr. Gaetano Giarrocchi, of Rome.

Cornell Honors Goldwin Smith.—Cornell University is to erect a memorial tablet in Goldwin Smith Hall in honor of the late Professor Goldwin Smith, upon which will be inscribed a copy of the clause in his will bequeathing more than $600,000 to the university.

The New York Academy of Medicine.—At a stated meeting of the academy, held on Thursday evening, October 6th, Dr. E. Grawitz, professor of pathology in the University of Berlin, read a paper entitled The Definition of Pernicious Anæmia and its Treatment.

Cholera in Italy.—The official report, dated October 2d, of conditions in the cholera infected districts of Italy during the preceding twenty-four hours shows the following: Naples city, eleven new cases, four deaths; Naples province, eleven cases, two deaths; Apulia, two cases, two deaths; Sassari province, two cases.

Typhoid Fever in Philadelphia.—During the week ending October 1, 1910, there were eighty-four cases of typhoid fever reported to the Department of Health of Philadelphia, as compared with forty-five during the previous week. It is said that many of these cases were contracted outside of the city.

The Carpenter Lecture.—On Thursday evening, October 20th, at 8:30 o'clock, Major F. F. Russell, Medical Corps, United States Army, will deliver the Carpenter lecture in Hosack Hall, of the New York Academy of Medicine. His subject will be The Control of Typhoid Fever in the Army by Means of Vaccination.

The New Hospital for the Rockefeller Institute will be opened on October 10th. The building has been completed, and preparations have been made for the removal of patients from the Research Hospital. The new building is situated at the foot of East Sixty-fifth Street and extends along the river front for two blocks.

The Syracuse, N. Y., Academy of Medicine.—A regular meeting of the academy was held in the Carnegie Library Building on Tuesday evening, October 4th. The programme included two papers, as follows: Head Injuries by Dr. E. S. Van Duyn; Acromegalia with Goitre, Uterine Fibroid, and Syringomyelia, by Dr. H. L. Elsner.

The Harvey Society Lectures.—The first lecture in the sixth course of lectures held under the auspices of the Harvey Society will be delivered in the New York Academy of Medicine on Saturday evening, at 8:30 o'clock, by Professor H. Chiari, of the University of Strassburg. His subject will be Die Bedeutung der pathologischen Autopsie und soustiger pathologisch-anatomischer Untersuchungen.

Opening Exercises of the College of Physicians and Surgeons, the medical department of Columbia University, New York, were held on Thursday, September 29th. A slight falling off in the registration this year was noted, the first class having an enrollment of seventy-five, against ninety in 1909. This was ascribed to the more rigid entrance examinations which went into force this fall. Dr. William G. MacCallum, professor of pathology in the university, delivered the principal address, his subject being the Future of Medicine.

Atlanta College of Physicians and Surgeons.—Announcement is made of the receipt of a gift of $50,000 to establish and equip laboratories of histology, physiology, and embryology. Dr. Harry S. Bachmann, of Philadelphia, has been elected professor of physiology; Dr. Justin F. Grant, of Morgantown, W. Va., professor of embryology and histology, and Dr. W. W. Funk, of Philadelphia, has been appointed adjunct professor of bacteriology.

The University of Buffalo.—The sixty-fifth regular session of the medical department of the university was inaugurated on Monday evening, September 26th. Dr. Charles Cary presided and the principal address was delivered by Dr. Thew Wright. The faculty for 1910-1911 will be the same as last year, with one exception. Dr. Francis C. Goldsborough, of Johns Hopkins, will succeed Dr. Matthew D. Mann as professor of obstetrics. The new laboratory building for chemistry is rapidly nearing completion and is expected to be ready for occupancy next month. The pathological laboratory is to be enlarged and will occupy the quarters formerly used by the department of chemistry.

The Kentucky State Medical Association.—The fifty-fifth annual meeting of this association was held in Lexington on Tuesday, Wednesday, and Thursday, September 25th, 26th, and 27th, under the presidency of Dr. I. A. Sherley, of Winchester. Officers for the ensuing year were elected as follows: President, J. G. Carpenter, of Stanford; first vice-president, Dr. J. W. Pryor, of Lexington; second vice-president, Dr. B. E. Giannini, of Coalmont; third vice-president, Dr. G. E. Hancock, of Henderson; secretary, Dr. A. T. McCormack, of Bowling Green; treasurer, Dr. W. B. McClure, of Lexington. The next meeting of the association will be held in Paducah, in October, 1911.

The Michigan State Medical Society.—The forty-fifth annual meeting of this society was held in Bay City on Wednesday and Thursday, September 28th and 29th. About two hundred delegates were in attendance, and the meeting was very successful in every particular. Detroit was chosen as the next meeting place of the society. Officers for the ensuing year were elected as follows: President, Dr. C. E. Burr, of Flint; first vice-president, Dr. Charles T. Southworth, of Monroe; second vice-president, Dr. Henry Kremers, of Holland; third vice-president, Dr. A. B. Simonson, of Calumet; fourth vice-president, Dr. I. L. Spaulding, of Hudson. The secretary and treasurer of the society were reelected.

Cholera in New York Harbor.—It is reported that cholera has reached New York harbor, in spite of the most rigid precautions which have been taken by the health authorities. On September 26th a patient suspected of having cholera was sent to Swinburne Island, where he died three days later. On September 25th a man died from cholera on board the *Santa Anna*, which is now in quarantine in New York harbor, and there are two suspected cases of the disease under observation by Dr. Doty. On board the Hamburg-American liner *Moltke* is one suspected case. Surgeon General Wyman, of the United States Public Health and Marine Hospital Service, does not regard the situation as serious, and believes that the precautions taken by the United States Government precludes any possibility of cholera invading this country.

Personal.—Dr. Max Hühner, of 667 Madison Avenue, New York, has returned from Europe.

Dr. Frank Woodbury, of Philadelphia, who is secretary of the Commission in Lunacy of the Pennsylvania State Board of Charities, sailed for Europe on Wednesday, September 21st, to attend the International Congress for the Care of the Insane, which was held in Berlin on October 3d. He was appointed official delegate to represent the United States at the Congress.

Captain S. M. De Loffre, of the Medical Corps, United States Army, who has been studying at the Rotunda Hospital, Dublin, Ireland, for the past six months, has received the degree of licentiate in medicine from this institution, also a special certificate in gynæcology.

Dr. E. T. Ball, formerly of the University of Missouri, has been appointed assistant professor of anatomy in the University of Minnesota.

Dr. A. L. Wolbarst, of 105 East Nineteenth Street, New York, has returned from a trip abroad. He has brought with him a supply of Professor Ehrlich's "606," with which he will make tests in his hospital work.

Vital Statistics of New York.—During the week ending September 24, 1910, the deaths from all causes reported to the Department of Health of the city of New York numbered 1,302, corresponding to an annual death rate of 14.14 in a thousand of population, as compared with a rate of 13.99 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.82; the Bronx, 15.19; Brooklyn, 13.27; Queens, 11.94; Richmond, 14.48. There were 114 stillbirths. The deaths of children under five years of age numbered 476, of whom 343 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 173; over five years of age, 181. There were 14 deaths from suicide, 6 from homicide, and 47 due to accidents.

Suicides in the United States during the Year 1909.—The slight numerical increase in the deaths, 8,402, from suicide registered for 1909 over the number, 8,332, for 1908, is less than the relative increase of the estimated population of the registration area, so that the death rate decreased from 18.5 to 17.2 in 100,000 of population. The most common means of suicide for the year was poison, 2,464, followed by firearms, 2,395; hanging, 1,215; asphyxia, chiefly by illuminating gas, 989; cutting instruments, 536; drowning, 507; jumping from high places, 156; crushing, 84; and other or unspecified means, 58. Undoubtedly many deaths from suicide fail to be reported so that they can be compiled under this head, but the increasing precision of statement of the nature of the death in cases of deaths from violent causes renders the statistics more accurate from year to year, and thus accounts for some of the apparent increase in the death rate from suicide.

Meetings of Sections of the New York Academy of Medicine.—At a meeting of the Section in Neurology and Psychiatry, to be held on Monday evening, October 10th, the principal feature of the programme will be a paper by Dr. E. W. Scripture entitled Neurology at Zurich—von Monakow's New Theory of Vein Localization, Jung's Psychoanalysis and Interpretation of Dreams. Among those who will participate in the discussion are Dr. A. A. Brill, Dr. August Hoch, and Dr. Ernest Sachs.

On Thursday evening, October 13th, the Section in Pædiatrics will meet. Dr. Charles G. Kerley will present a report of a case of purpura hæmorrhagica in a six year old boy successfully treated by injections of human blood serum. Two papers will be read as follows: Mechanical Injuries (Falls and Blows) of the Head in Infants and Children; the Necessity for Immediate Treatment, and what this should be, by Dr. H. Illoway; Nitrogen Metabolism in Normal (Artificially Fed) Children, by Dr. B. Raymond Hoobler. A general discussion will follow.

The Section in Otology will meet in Friday evening, October 14th, at 8:30 o'clock. Dr. Robert L. Loughran will present a patient showing a case of sinus thrombosis with extensive accumulation of free pus in the vein. The paper of the evening will be read by Dr. Percy Fridenberg on Mechanical Aids to Hearing.

More Money Wanted by the New York Health Department.—Health Commissioner Lederle has sent to the Board of Estimate a communication requesting an increase of $1,332,975 in the budget allowance of the Department of Health for 1911. In asking for an increase of $316,145 in the Division of Child Hygiene Dr. Lederle said: "The increase requested includes provision for the employment of 266 nurses in addition to the present force of 142, and 49 medical inspectors in addition to the present force of 161, in order to admit of the physical examination of the children attending all the free schools of the city instead of, as at the present, the public schools only, and to continue throughout the year the instruction of mothers in the care of newly born infants instead of, as at the present, only during the summer months." An increase of $60,300 is asked for the Bureau of Milk Inspection. The largest increase asked for is for the Division of Hospitals. Dr. Lederle wants $487,796 aditional to be able to provide "one hospital doctor to every forty patients, one day nurse to every ten patients, and one night nurse to every fifteen patients." The present appropriation makes allowance for only one doctor to every ninety patients, one day nurse to every sixteen patients, and one night nurse to every twenty-one patients. Dr. Lederle also asks $96,311 additional for the municipal tuberculosis sanatorium at Otisvile.

The Health of Chicago.—During the week ending September 24, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 92 cases, 5 deaths; measles, 12 cases, 0 deaths; whooping cough, 35 cases, 4 deaths; scarlet fever, 63 cases, 2 deaths; diphtheria, 127 cases, 10 deaths; chickenpox, 8 cases, 0 deaths; tuberculosis, 106 cases, 52 deaths; pneumonia, 12 cases, 42 deaths; cerebrospinal meningitis, 2 cases, 0 deaths. Total number of cases reported was 466, as compared with 503 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 119. There were 13 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 197, of whom 140 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 565, corresponding to an annual death rate of 13.5 in a thousand of population, as compared with a rate of 13.3 for the preceding week and 14.6 for the corresponding period last year.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending October 1, 1910:

	September 24th.		October 1st.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	662	156	578	178
Diphtheria and croup	188	19	267	13
Measles	51	6	60	8
Scarlet fever	82	4	78	3
Smallpox	..	..	..	..
Varicella	9	..	20	..
Typhoid fever	133	11	136	24
Whooping cough	50	5	48	4
Cerebrospinal meningitis	6	2	3	5
Total	1,181	203	1,190	235

Trachoma in Philadelphia.—Within a short time the bureau of municipal research will make public a report by a specially appointed commission of ophthalmologists on the subject of trachoma in Philadelphia. As cases of this disease of the eyes are reported from time to time, three new ones coming to light during the past week, the report will be received with interest, not only by eye specialists but by physicians generally. It is a mystery how cases of trachoma get into this country, in view of the drastic immigration regulations against admitting any one suffering from the disease. In Europe the disease is prevalent, and all newcomers are subjected to an examination for trachoma before they are permitted to set foot on American soil. The trachoma commission is composed of six well known physicians: Dr. C. P. Franklin, chairman, and Dr. William C. Posey, Dr. William Zentmayer, Dr. McCluney Radcliffe, Dr. C. S. Schwenk, and Dr. E. A. Shumway. Dr. Aaron Bray is in charge of the Trachoma Institute, which is situated at 227 Pine Street.

Society Meetings for the Coming Week:

MONDAY, *October 10th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Society of Alumni of St. Mary's Hospital, Brooklyn; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association; Williamsburg Medical Society, Brooklyn, N. Y.

TUESDAY, *October 11th.*—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

WEDNESDAY, *October 12th.*—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

THURSDAY, *October 13th.*—New York Academy of Medicine (Section in Pædiatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, *October 14th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.

The Society of Insurance Medical Officers was organized recently in Chicago, its object being "to establish an organized center of thought and action for the advancement of medical knowledge appertaining to life insurance by personal intercourse of its members, presentation of papers, discussions, and such other methods as may from time to time be found desirable." The following officers were elected: President, Dr. Allison Maxwell, of Indianapolis; vice-presidents, Dr. Calvin H. English, of Fort Wayne, and Dr. Stephen S. Werth, of Chicago; secretary, Dr. Edgar R. Hawley, of Chicago; Executive Committee, Dr. William F. Milroy, of Omaha, Dr. C. W. McCloud, of St. Paul; Dr. Joseph Johnson, of Chattanooga; Dr. Russell M. Young, of Des Moines, and Dr. M. M. Lairy, of Lafayette.

The Buffalo Academy of Medicine.—At a stated meeting of the Section in Medicine, which will be held on Tuesday evening, October 11th, the programme will include the following papers: Purins in Diathesis, in Disease, in Treatment, by Dr. Henry R. Hopkins; Cardiac Nutrition, by Dr. Eli H. Long; Chylous Cyst of Mesentery, by Dr. A. L. Benedict. The officers of the academy for the ensuing year are as follows: President, Dr. Carlton C. Frederick; secretary, Dr. Harry R. Trick; treasurer, Dr. Lawrence Hendee; trustees, Dr. Charles S. Jewett, Dr. Grover W. Wende, and Dr. Thomas F. Dwyer. Section in Medicine: Chairman, Dr. Lesser Kauffman; secretary, Dr. Carl S. Tompkins. Section in Surgery: Chairman, Dr. James A. MacLeod; secretary, Dr. James H. Lewis. Section in Obstetrics and Gynæcology: Chairman, Dr. J. F. Whitwell; secretary, Dr. Joseph S. Lewis. Section in Pathology, etc.: Chairman, Dr. Norman K. MacLeod; secretary, Dr. Henry Adsit. The council is composed of the above officers and the president of the academy for the previous year, Dr. Earl P. Lothrop.

Trained Red Cross Dogs.—At trials held in France during the past summer trained Red Cross dogs are reported to have performed wonderful feats, according to a statement in the October 1st issue of the *Army and Navy Journal.* The Red Cross dogs recognize no authority except that of a uniformed doctor with a red cross on his arm. They will not obey a command that is given even by an officer in uniform if the red cross is not on his sleeve. The dogs are trained in two different ways. One set is taught never to bark when a wounded soldier is discovered, for fear of drawing the attention of an enemy. The dog will take the soldier's cap in his mouth and rush back to camp, giving up his capture as a sign that a soldier in distress has been found. Another set, however, gives the alarm by short but regular howls, sounds which guide the medical corps to the spot where the wounded lie. In manœuvres. the "wounded" soldier hides in tall grass or in a ravine. One of the dogs is brought out for the test of finding him. After a momentary hesitation he is off, and after a short wait the astute little animal is seen bearing the red cap in his mouth. He singles out the doctor and places the cap at his feet. The doctor attaches a leash to him and the dog leads him to the hidden man.

A Free Dental Clinic in Philadelphia.—One hundred and forty dentists in Philadelphia have volunteered their services to the new municipal clinic for poor children, which began operations last Monday. The promoters of the movement believe that much good will result from this new institution. The work involves the examination of the teeth of every pupil in the public schools, and free professional attention to those who are unable to pay for the services necessary to restore or protect the health of the child. The establishment of the division of dental inspection of schools is the result of fully two years' quiet negotiations on the part of the associated dental societies of the city, the department of health and charities and private citizens. While the dental clinic will be conducted in cooperation with the bureau of health and the department of education, the direction will be in the hands of the following committee of dentists: Dr. McCullough, Dr. W. A. Jacquette, Dr. J. J. Burke, Dr. Charles B. Schupack, and Dr. E. C. Kirk. With an appropriation of $3,000 two rooms on the seventh floor of the city hall have been fitted with the most modern dental appliances. There are three chairs and sufficient supplies to carry on the work for a year. The dentists who have volunteered their services will devote time to inspection in the schools and to operating in the city hall offices.

To Teach Doctors How to Cure Disease Without Drugs.—Temple University, of Philadelphia, has inaugurated a course of medical training said to be unique among the medical schools of the world. The new course has to do with methods of effecting cures and developing the body to its highest efficiency without the use of drugs. Dr. J. Madison Taylor has been appointed adjunct professor to take charge of the new department. He has just returned from an extensive tour abroad, from which he brings much instructive data for his new course of lectures to Temple medical students.

The Herter Lectures.—The trustees of the Johns Hopkins University announce that the fifth course of lectures on the Herter Foundation will be given by Professor Hans Chiari, professor of pathological anatomy and director of the pathological institute, University of Strassburg, Germany. The lectures will be given in the auditorium of the physiological building, at 4 p. m., on Wednesday, October 5th, and the two following days at the same hour. The titles of the lectures are as follows: Wednesday, October 5th, Die Bedeutung des Amnion für die Entstehung von Missbildungen des Menschen; Thursday, October 6th, Pankreasnekrose; Friday, October 7th, Spondylolisthesis. The other lectures on this foundation were as follows: 1904, Professor Paul von Ehrlich, of the Royal Prussian Institute of Experimental Therapeutics; 1905, Professor Hans Horst Meyer, director of the Pharmacological Institute, University of Vienna; 1906, Sir Almroth E. Wright, M. D., F. R. S., late professor of pathology, Army Medical School, Netley, and pathologist to St. Mary's Hospital, London; 1908, Professor Edward A. Schäfer, LL. D., Sc. D., F. R. S., professor of physiology in the University of Edinburgh.

Poliomyelitis in the United States.—Poliomyelitis has been epidemic in various parts of the United States during the past two or three years, and in order to ascertain its actual prevalence and geographic distribution the surgeon general of the Public Health and Marine Hospital Service recently sent a letter to the secretaries of the State and territorial boards of health asking the number of cases of and deaths from poliomyelitis reported in 1909 and for each month from January to July, 1910. The following information was obtained from these letters: Colorado—One death at Cripple Creek in July, 1909. Connecticut—A slight outbreak at Meriden, with one death, in June, 1910; during July 18 cases with 2 deaths reported. District of Columbia—One death recorded in 1909; up to July 31, 1910, 7 cases reported, and during the first 19 days of August, 64 cases; the disease is not required by law to be reported. Florida—No cases reported and none known to have occurred. Illinois—During July, 1909, 32 cases reported, with no deaths. Kentucky—The secretary of the State board of health states that poliomyelitis is common in many sections of the State, but that at the present time no statistics of its prevalence are available. Kansas—An epidemic of poliomyelitis prevailed during the summer of 1909, over one hundred cases having been reported; during 1910, 57 cases and 15 deaths were reported in July, and from August 1st to 20th, 20 cases and 4 deaths. Maine—Cases have been reported in three different towns, but no exact statistics are available. Massachusetts—During the years 1907, 1908, and 1909 poliomyelitis was present, occurring in scattered foci in all parts of the State; in 1907, 234 cases were recorded; in 1908, 136 cases; in 1909, 923 cases; there were 51 deaths in 1909 in 628 cases studied. Michigan—Up to August, 1910, no cases of poliomyelitis have been reported. Minnesota—Outbreaks of poliomyelitis occurred in 1908 in Northfield, Barnum, and Hibbing; in 1909, 238 deaths and about 400 cases were reported; it is estimated, however, that there were probably 1,000 or 1,100 cases; during the present year 36 deaths had been reported up to the end of June; this would indicate at least 180 cases. Pennsylvania—During July, 1910, 152 cases were reported, and from August 1st to 18th, 105 cases. No information in regard to the disease is available in the following States: Alabama, Georgia, Montana, Nevada, Ohio, Tennessee, Utah, Virginia, and West Virginia. The information for New York State is not available for insertion at this time. The following named States have not been heard from: Arizona, Arkansas, California, Indiana, Iowa, Louisiana, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, South Carolina, South Dakota, Texas, Wisconsin, and Wyoming.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 22, 1910.

1. The Place of Tuberculin in the Immunization of Urogenital Tuberculosis, By G. P. Sanborn.
2. Acute Pancreatitis, with the Report of Two Cases, By Philemon E. Truesdale.
3. The Influence of Exhaustion upon Puerperal Morbidity. Based upon a Study of 5,000 Puerperia, By John T. Williams.
4. The Value of Tuberculin in Tuberculosis of the Urinary Tract, By Hugh Cabot.
5. Bacterial Vaccines in Pyogenic Infections of the Urinary Tract, By H. F. Hartwell.

1, 4. **Tuberculin in Urogenital Tuberculosis.**—Sanborn remarks that the use of tuberculin is indicated in case of organs involved which cannot be extirpated, such as the bladder; in case of any organ in which tuberculosis is very early and in which disintegration has not taken place to any considerable extent; in case of tuberculosis of both kidneys where it is deemed unwise to operate either; postoperatively in case that it is apparent that all tuberculous tissue was not removed or where organs that were involved could not well be extirpated; in any case where bladder involvement is present; in any case where there is a suspicion that tuberculous tissue has been left behind. Contraindications for tuberculin are: Persistence of temperature after drainage usually indicates that there is still some pocket that has not been reached. If such a possibility is eliminated, and the rise of temperature still persists, in the absence of pulmonary involvement, which should always be sought, tuberculin may be cautiously used. Tuberculin should not be used in febrile cases until these questions are settled. If there is active pulmonary involvement, if tuberculin is given at all, the dose should be modified according as the pulmonary condition requires. Tuberculin is never a panacea, it has no resemblance in its action to antitoxine, and can never be counted on as an efficient measure of last resort when the patient has one foot in the grave.—Cabot divides the cases in which he has used tuberculin in urogenital tuberculosis into two classes: 1. Those in which the disease has been apparently completely removed, as in unilateral kidney infections without bladder involvement. In these cases its use has resulted in permanent and prompt wound healing, in contrast to cases in which a sinus follows operation, leading either to the stump of the ureter or to the pedicle. While patients of this type usually recover under ordinary methods, it has seemed that tuberculin saves much time and anxiety to the patient. 2. Those cases in which though the principal focus of the disease has been removed, a certain amount still remains. As types may be taken, the unilateral kidney lesions with bladder involvement and unilateral lesions of the epididymis and vas, with involvement of the prostate. In treating patients of the first class he has for the past year been giving tuberculin after the method advised by Trudeau to all cases of nephrectomy or epididymovasectomy for tuberculosis immediately after operation, with very good result.

2. **Acute Pancreatitis.** — Truesdale observes that there are mild cases of acute pancreatitis which undoubtedly clear up without treatment. When the disease is of moderate severity and associated with cholecystitis and cholangeitis, drainage of the bile passages is indicated. In acute hæmorrhagic pancreatitis the situation differs somewhat from that found at the beginning of an acute fulminating process in the appendix, gallbladder, or pelvis. In the latter diseases operation in the first twenty-four hours usually finds the patient in as favorable a condition as he will be, while in acute hæmorrhagic pancreatitis, the degree of shock which accompanies the onset of the disease must be added to the risk of surgery. It is probable that many of the surgical deaths incurred by operations undertaken in the first twenty-four hours would be medical deaths if let alone, yet an operation if not carefully and expeditiously executed can, at the outset, remove the only chance a patient may have for recovery. Every death from acute pancreatitis in the first twenty-four hours is not necessarily from surgical neglect. When an acute process assumes a severe hæmorrhagic character, as the result of a dyscrasia similar to that which occurs in a pure pancreatic apoplexy, but little hope can be entertained from operative interference. A patient presenting the symptoms of shock at the onset of this disease, when the diagnosis can be made, should be treated by the use of hot saline infusions first and surgery later. When a distinctive diagnosis cannot be made, and the degree of shock is not too severe, immediate exploratory laparotomy would seem to be indicated. Whether the condition disclosed is a perforation of the stomach, intestine, or gallbladder, or an acute pancreatitis, a short, well executed operation will offer the most hope.

3. **The Influence of Exhaustion upon Puerperal Morbidity.**—Williams bases his conclusions upon a study of 5,000 cases: A temperature of 100° F. or above occurs at some time during the first twelve hours after delivery in about 20.5 per cent. of all cases. The temperature curve during this period in the majority of cases corresponds with the diurnal variation. This elevation of temperature does not necessarily correspond to the duration of labor, but probably does to its severity. The pulse rate is a less reliable index of exhaustion than the temperature. It most commonly falls during the first twelve hours, a rise in the majority of cases accompanying a corresponding rise of temperature. Puerperal morbidity, with the exception of mastitis, increases in direct proportion to the duration of labor. This increase affects equally all the more common complications of the puerperium. Cases in which there is an elevation of temperature during the first twelve hours after delivery are followed by a higher morbidity than those in which there is not; and when this temperature reaches to 101° F. or over, the subsequent morbidity is 38.09 per cent. An elevation of pulse at the end of labor is of comparatively slight prognostic importance from this standpoint, but is followed by a slightly increased morbidity. The morbidity is greatest after the high operations, but here, as is also true of the low operations and spontaneous delivery, the morbidity increases in direct proportion to the duration of labor. The morbidity after low forceps is less than after spontaneous delivery, presumably be-

cause labor is shortened and exhaustion lessened. From every standpoint from which it has been considered, it is evident that exhaustion during labor has a distinct influence toward increasing puerperal morbidity.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 1, 1910.

1. The Book Keeping of Humanity, By J. N. Hurty.
2. A Brief Report of the Nebraska Epidemic of Poliomyelitis, By H. M. McClanahan.
3. The Rôle of Ophthalmology in Preventive Medicine, By Hiram Woods.
4. Metabolism and Mouth Disease, By Henry R. Harrower.
5. The Present Status of Typhoid Inoculation, By George H. R. Gosman.
6. The Treatment of Syphilis with Ehrlich's "606," By Henry J. Nichols and John A. Fordyce.
7. Creatinin and Creatin Metabolism in Children, By J. P. Sedgwick.
8. Systemic Conditions in Relation to Oral Symptoms and Sepsis, By V. A. Latham.
9. The Relation of Blood Platelets to Hæmorrhagic Disease, By W. W. Duke.
10. Operative Treatment of Club Foot, By Charles Ogilvy.
11. Partial Thyreoidectomy in Dementia Præcox, By Randolph Winslow.
12. Influence of Collodial Protection on Milk, By Jerome Alexander and Jesse G. M. Bullowa.
13. Is Acute Chorea an Infectious Disease? By Alfred Gordon.
14. Unusually Quick Rash Following Injection of Diphtheria Antitoxine, By Louis Newett.
15. Essential Hæmospermia, By A. Nelker.

1. **Vital Statistics.**—Hurty remarks that the importance of vital statistics to the family, to the State, and to medicine, can hardly be overestimated. The physician, the representative of the science of medicine, is, except in instances, the only member of society who can supply information in regard to causes of deaths and the presence of infectious diseases. As it is of very great importance to the family that its births, deaths, and cases of infectious diseases be legally recorded, and as the family presumably pays for the physician's services, the physician, therefore, should not consider his services fully performed nor that he is entitled to his fee until the certificates which are of such great importance are duly made. And again, the physician should remember when reporting vital statistics, that he is giving obedience to the statutes of his State, on which he depends for protection; that he is protecting the helpless; that he is doing a general good, and that he is serving the science of medicine.

2. **Nebraska Epidemic of Poliomyelitis.**—McClanahan's reports show that nearly all the fatal cases were due to bulbar paralysis, an involvement of the motor centres in the medulla leading to paralysis of respiration. The reports indicate that nearly ninety per cent. of the cases were of this type, and that nearly all of these patients died within the first three days. When bulbar symptoms occur death may ensue within a few hours. These symptoms may occur in cases that otherwise seem mild. Again there may be cases with serious cerebral symptoms without bulbar symptoms; hence with all cases we have this complication to fear. Constipation was the rule, diarrhœa the rare exception. The constipation was obstinate, sometimes requiring two or three days to secure a bowel movement. This would seem to indicate that the disease caused an inhibitory effect on the muscular coats of the bowel. Vomiting was a rare symptom. Over 80 per cent. of the patients vary in age from two to ten years, the extreme limits of age being four months and sixty-seven years. A patient who died at the age of thirty-seven was the oldest one reported whose case was fatal. The most surprising feature of the report, however, is the number of cases reported of complete recovery, and probably twenty-five per cent. would be a liberal estimate of those who are permanently paralyzed. He concludes that polyomyelitis is an infectious disease, the evidence that it is contagious is accumulating. The only safe procedure is to treat it as we would measles or scarlet fever; namely, isolate the patient. We should realize that it is a general disease, that it may involve any part of the nervous system, that the bulbar type is usually fatal, and that our treatment should be directed toward prompt and efficient elimination.

5. **Typhoid Inoculation.**—Gosman thinks that inoculations against typhoid fever are valuable as a method of preventing the disease and are perhaps the most valuable single asset we have in combating an epidemic, and that there is surely no doubt in the minds of most thinking and up to date medical men that they should be used in the following classes of persons: First, all nurses, ward attendants, hospital corps men, red cross assistants, physicians, and medical students; also all persons who contemplate a journey into a section where typhoid is known to exist or is suspected of existing. Also, the inoculations should be done generally in districts suffering from an epidemic, and especially in the families where a case exists, and in time of war all volunteers at camps of concentration should be inoculated as soon as possible after the camp is started. Finally, it seems that typhoid will always be with us, but there is no necessity of its always being with us in our armies to any such appalling extent as it has in the past; therefore, the necessity for antityphoid inoculations will surely always be with us, for no matter how careful we are of our sanitation, our milk, our water, our flies, our contact infection, we will always have one or more of our much talked of friends, the chronic typhoid carriers, and it is only by inoculating them and other friends and acquaintances that we can keep more or less of them free from typhoid. He is convinced of the harmlessness, and at the same time, of the effectiveness of this procedure, and would recommend its universal adoption, to the end that our armies in time of peace and war, and our communities at all times, may be kept as free as possible from that terrible epidemic disease, typhoid.

6. **Ehrlich's Dioxydiamidoarsenobenzol.**—Nichols and Fordyce report fourteen cases treated with 606 during May and June. They believe that we have in arsenobenzol a most thorough agent in controlling the manifestations of syphilis which are caused by the presence of the spirochætæ. They conclude that it may be reasonably hoped that all the lesions which depend on the presence of the organism will be favorably influenced and the most

we can expect in the secondary degenerative changes is that the process may become arrested. Further experience with the drug will determine with more accuracy the dose which is necessary to bring about a cure, the time that must elapse before a second dose can be safely given, and the more definite indications for its use after relapses or failure of a single dose to control the symptoms.

7. **Creatinin and Creatin Metabolism in Children.**—Sedgwick states that the study of the creatin and creatinin metabolism in children, although a promising one, has been little worked on. The opinion held until five years ago that infants do not excrete creatinin is undoubtedly incorrect. Creatinin is present in the liquor amnii, which may mean that its excretion begins before birth. Creatinin is always in the urine of the first week and in a concentration approximately that of adult urine. Creatin is also excreted during infancy. In later infancy creatinin is present in the urine uniformly, but in much more dilute condition than with adults, or during the first week. Analyses of urine in disease indicate that we may hope to get some clue to the processes of nitrogen metabolism by the study of creatin and creatinin.

9. **Blood Plates.**—Duke states that in the cases of hæmorrhagic disease, evidently differing in nature and ætiology (acute and chronic idiopathic purpura hæmorrhagica, chronic ulcerative colitis, aplastic anæmia, nephritis), the constant features associated with the tendency to bleed were the reduced number of plates, and the modification of the clot probably dependent on it, namely, diminished retractility. In the cases reported by the author, relief of the tendency to bleed followed not only the rises in the plate count occurring at a remission in the disease, but followed also the rise brought about by transfusion. In the latter case, the tendency to bleed returned when the plates disappeared. Experiments in which the plate count was reduced by benzol failed to show an abnormity in the coagulability of the blood, which accounts for the hæmorrhages of benzol poisoning. The structure and the mode of formation of experimental thrombi suggests, from an anatomical standpoint, that plates play a rôle in stopping hæmorrhage. The type of hæmorrhagic disease described in this paper can be sharply distinguished from other types of disease, such as hæmophilia, melæna neonatorum, purpura simplex, Henoch's purpura, etc., which are due to other abnormities. To this type of disease belong the so called idiopathic purpura hæmorrhagicas, and some cases of symptomatic purpura. The latter will probably be found most frequently in aplastic anæmia, pernicious anæmia, lymphocytic leuchæmia, typhoid fever, and intestinal diseases. The symptoms may be mild, or may be so severe and acute that the patient bleeds to death in a few days. In mild cases, purpura may not appear. The only demonstration of the disease may be excessive hæmorrhage from a local lesion. The diagnosis is easy. If the plate count is reduced to a sufficient degree to cause hæmorrhage, the fact may be determined by examining carefully made cover glass preparations. The absence of retractility of the clot is considered by Hayem and his pupils characteristic of the condition, and is of diagnostic import. A point which he has found of value in following the cases and also in the diagnosis is the marked delay in the bleeding time. Transfusion gives good results in the treatment of the disease. In addition to replacing blood, it stops hæmorrhage for a few days, and may tide the patient over a serious crisis. The treatment is probably applicable to the symptomatic as well as to the idiopathic types of disease, and may be useful in the treatment of some cases of typhoid hæmorrhage.

10. **Club Foot.**—Ogilvy observes that corrective manipulation of club foot should begin at birth, and early operation should be done if necessary (seventh or eighth month). Operative procedures will depend on the degree of deformity, and are as follows: 1. Forcible manipulation under an anæsthetic; 2, subcutaneous division of contracted structures; 3, Phelps's open operation; 4, other bone operations, especially excision of a portion of the cuboid in selected cases, or osteotomy of the tibia for marked inward rotation. Long continued and careful postoperative attention is essential. The best results are always obtained when the treatment is begun at birth.

11. **Partial Thyreoidectomy in Dementia Præcox.**—Winslow thinks that there is a connection between the thyreoid gland and the peculiar affection called catatonia. Partial thyreoidectomy in the early stages of this disease exercises a favorable and sometimes a curative effect on the condition. In late stages of catatonia and in the other forms of dementia præcox, partial ablation of the thyreoid is not followed by beneficial results. The operation is attended with the usual dangers of thyreoidectomy and should be done with as much care as in exophthalmic goître, especially in regard to free drainage.

12. **Colloidal Protection of Milk.**—Alexander and Bullowa say that increasing the colloidal protection of the casein in cow's milk by the addition of suitable protective colloids tends to improve the digestibility and absorption of both the casein and the fat, and to prevent the formation of indigestible curds and their consequences. Such colloidal protection may be accomplished by the use of animal proteins (gelatin, albumin), vegetable proteins (gluten) or carbohydrates (gum arabic, tragacanth, Irish moss), so that there is wide choice in clinical practice. The dextrinized gruels now used combine the protective colloids gluten and dextrin. Under the ordinary conditions of digestion, casein is coagulated only in neutral or acid solution; it is quite evident, therefore, that alkalis such as lime water and sodium bicarbonate may, by their antacid action, partially or entirely inhibit the coagulation of casein. Quite different, however, is the case of sodium citrate, which acts as a protective colloid, as before stated.

13. **Acute Chorea.**—Gordon thinks that acute chorea, similarly to acute poliomyelitis, is probably associated with some infectious element. The onset of the disease and its pathological anatomy render the two affections analogous. The fundamental difference lies in the fact that in one disease the motor cells are being destroyed, hence the paralysis, in the other disease the motor cells undergo irritation, hence the twitching. The destructive effect in the former and the irritating effect in the latter point to a difference in the virus in the two affections. It

is possible that a certain variety of staphylococcus is specific in chorea, but so far it has not yet been determined. Continuous work in this direction may eventually lead to the discovery of the ætiological factor and, therefore, of a therapeutic serum.

MEDICAL RECORD

October 1, 1910.

1. Street Dust as a Factor in Spreading Disease; Methods of Removal, By JAMES M. ANDERS.
2. Surgery in Its Relation to Nervous Patients, By LOUIS N. LANEHART.
3. Gonococcus Infection of the Kidney with Reports of Cases, By FRANCIS R. HAGNER.
4. Report of a Case of Carcinoma of the Splenic Flexure of the Colon Treated with the Neoformans Vaccine, By CHARLES D. AARON.
5. The Diagnosis of Incipient Pulmonary Tuberculosis, By HENRY HUBBARD PELTON.
6. The Metreurynter Incision of Dührssen in the Treatment of Placenta Prævia with Report of a Case, By SAMUEL WILLIS BANDLER.
7. Neuritis, By WILLIAM BENHAM SNOW.
8. Stricture of the Male Urethra, By WALTER BROOKS BROUNER.

1. **Street Dust as a Factor in Spreading Disease.**—Anders in speaking of means of removing street dust, says that the vacuum or pneumatic method as practised in Berlin gives the best results; it possesses two marked advantages: First, the street dirt is removed without raising any dust, and secondly, the process insures a more rapid, satisfactory, and complete cleansing than is obtainable by other methods. In Italy, Gaglielminetti has been waging a campaign for years on behalf of the application of crude oil to roadbeds; he has adduced convincing evidence to show that the method costs but little more than one cent a square yard, while it renders the roads more resistant and saves repairs with entire suppression of the dust. On the other hand, tests made of petroleum products to prevent dust on highways by Christiana and Michelis have not proved satisfactory. Again, it must be recollected that the use of crude oil is inadvisable in streets paved with asphalt, which absorbs this substance. The method of allaying street dust in cities by means of street sprinkling is to be advised and encouraged throughout the nonfreezing period of each year. It must be confessed, however, that the watering of streets in this manner is impracticable in many towns and smaller cities owing to the expense involved. Among measures advised by a committee appointed by the Stuttgart Medical Society in 1907 to discuss the question of the prevention of dust were to keep the streets carefully cleaned and warning notices in regard to the dangers of dust to be placarded by the Board of Health. Slack well says: "Street sweeping at night, such as is usual in market districts, is to be commended, thus avoiding the stirring up of large quantities of dust during the day when the streets are crowded. Oiling and watering the streets are wise sanitary precautions, and money spent on these means of keeping our streets free from dust is saved a hundred times over in the health of the people."

3. **Gonococcus Infection of the Kidney.**—Hagner reports a case of gonococcus infection of the kidneys. He says that careful search of the literature discloses some sixteen cases of mixed infections in which the gonococcus was thought to be present, and only nine cases could be found in which the gonococcus as the causative agent alone was demonstrated. The character of the infection in some of these nine cases can be questioned as no cultures were taken. Although there is a diversity of opinion as to whether the infection is an ascending, hæmatogenous, or lymphogenous one, it seems more than probable that in the majority of cases it is an ascending infection due to extension along the lymphatic vessels surrounding the ureters.

5. **Diagnosis of Incipient Pulmonary Tuberculosis.**—Pelton says that the following factors are the most important and the one on which chiefest dependence is to be placed in diagnosticating a case of suspected incipient pulmonary tuberculosis: 1. The anamnesis. A history of association with other cases of tuberculosis and of previous illnesses such as would point to pulmonary infection is very suggestive. 2. Proper, thorough, and, if necessary, frequently repeated physical examination. 3. Careful observation of the symptoms of toxæmia. 4. The cutaneous tuberculin test. 5. X ray examination. 6. As a final recourse, a diagnostic injection of tuberculin. Sputum examination is unreliable.

8. **Stricture of the Male Urethra.**—Brouner observes that the treatment of stricture of the male urethra is prophylactic, nonoperative, and operative. 1. By prophylactic he means that gonorrhœa should be conscientiously treated so that the possibility of stricture following an attack of gonorrhœa may be eliminated. He begins the passage of soft instruments as soon as the gonococci have disappeared. Many obstinate cases with shreds in the urine directly following an attack of gonorrhœa clear up under sound introduction, after local applications, such as silver nitrate, have failed. No patient should be discharged as cured until a thorough exploration of his urethra has been made. 2. Nonoperative treatment. Strictures are open or closed. A large majority of strictures are amenable to dilatation. Even though at first admitting but a filiform, we may gradually, with tunneled instruments (followed by soft instruments later), work them up to at least 20 French and then continue our work with rigid instruments, until we have dilated the urethra up to what we consider the normal size for the given individual. The results of such treatment so far as permanency is concerned are just as good as those following cutting operations, if not better, for even when operative treatment is employed we are forced to use dilators thereafter for a certain interval. In all our manipulations of the urethra we must not employ force, but gentleness coupled with patience and persistence. The mortality of such dilatations is practically nil. Divulsions are not desirable, as they do too much violence to the urethral structures and eventually leave the patient as badly off (if not worse) than before the treatment. 3. Operative treatment. There are certain cases which are not amenable to dilatation. Then there are certain emergency operations, such as retention, fistulæ, extravasation, etc., which require operation on the urethra. We then have one of three operations to perform—viz., internal, external, or combined internal and external operations. There is a certain degree of danger from

hæmorrhage, infection, anuria, etc. Operations on the urethra to-day are not so numerous as formerly, and are accompanied by a relatively decreasing mortality, owing to our advanced ideas as regards preliminary and after treatment, and our special improved surgical equipment and technique.

BRITISH MEDICAL JOURNAL.

September 17, 1910.

1. Remarks on Eighteen Cases of Spinal Analgesia by the Stovaine Strychnine Method of Jonnesco, Including Six Cases of High Dorsal Puncture, By Lawrie McGavin.
2. Remarks on Anæsthetizing Patients for Operations on the Throat, Nose, and Accessory Sinuses, By Stuart V. Stock.
3. State Insurance and the Poor Law Commission, By J. H. Keay.
4. State Invalidity and Sick Insurance, By E. Rowland Fothergill.

1. **Jonnesco's Spinal Analgesia.**—McGavin reports his experience with eighteen cases of spinal analgesia by the stovaine strychnine method of Jonnesco, six of which were high dorsal puncture. He concludes that as a whole the results were disappointing. Four cases with high puncture were successful, and show that as far as analgesia above the phrenics is concerned, the method has some element of possibility in it; it is, however, uncertain, imperfect at present, and of doubtful value in replacing general anæsthesia. The two unsuccessful cases of high puncture show it to be fraught with danger, and from the humane standpoint unjustifiable. The cases of low puncture serve to show very little else than that strychnine can be injected into the spinal canal without producing spastic symptoms, and that it undoubtedly results in a shortening of the period of analgesia usually resulting from the use of stovaine alone. The effects of the analgesic on the cranial nerves appear to be irregular. So far as he has been able to see, the first, second, third, and fourth remain unaffected; the fifth is at times under control, as is also the seventh; the sixth, eighth, ninth, tenth, and twelfth are unaffected, while the eleventh may or may not be paralyzed. That the four last nerves should escape when the trigeminal is affected is a very remarkable fact, seeing that, lying in that portion of the base of the skull to which the injection has most ready access, they must of necessity be bathed in the solution. It seems that stovaine is not a cardiac depressant, although it is to some extent a vasodilator, as shown by the slight fall of blood pressure which has been noticed in some of the 500 odd cases of spinal analgesia carried out in the author's wards at Greenwich. The author does not see the object in adding strychnine to cases of low spinal analgesia, since he has no difficulty in carrying out operations under stovaine analgesia without it, even when such analgesia has been pushed to the level of the clavicles, which operation even in skilled hands is of doubtful safety; but, even if strychnine has been added to the stovaine to make it safer, it is still impossible to rely upon it in any particular case, and it is precisely this fact which has compelled the author to forego the further use of Jonnesco's method. The idea it has in view is splendid, but to be of use it must show a high percentage of safety, and this condition it does not at present fulfil. These remarks, he continues, apply solely to cases done by the stovaine strychnine method, the results of which must not be confounded with those of the stovaine glucose method of Barker. Of these latter cases, considerably over 500 have now been done in the wards of the Seamen's Hospital, with perfect satisfaction to the patients and our author. In this series, which extends over a period of three years, no case has as yet been met with in which there were alarming or dangerous symptoms either during or after operation; while the simplicity of the method, the comfort of the patient on the table, the immunity from unpleasant after effects, and the saving of time which it ensures, combine to make it the method of election in cases suitable to its use.

LANCET

September 17, 1910.

1. Vaccine Therapy: Its Administration, Value, and Limitations, By Sir Almroth E. Wright.
2. A Case of Chondrocarcinoma of the Testis, By William Sheen, H. A. Scholberg, and R. L. Mackenzie Wallis.
3. The Enucleation of Tonsils with the Guillotine, By Samuel S. Whillis and Frederick C. Pybus.
4. Verminous Appendicitis, By H. A. Lediard.
5. A Note on the Toxicology of Carbon Monoxide, By W. James Wilson.
6. The Ventilation of Ships, particularly Merchant Ships, By W. E. Home.
7. The Pioneer in the Hygiene of Ventilation, By David Frazer Harris.
8. The Benenden Sanatorium and Industrial Insurance for the Treatment of Phthisis, By T. D. Lister and W. D. Wilkins.

2. **A Case of Chondrocarcinoma of the Testis.**—Sheen, Scholberg, and Wallis remark that all primary new growths of the testis are comparatively rare. Carcinomata are commoner than sarcomata. Carcinoma proper and embryoma occur with about equal frequency. Chondrocarcinoma belongs to the embryoma class. Its usual characters are as follows: A tumor of the testis in a male adult, of average age, thirty, often following an injury, particularly a blow, sometimes with a considerable latent period between the blow and the rapid growth of the tumor. The tumor is often painless and only noticeable because of its size and weight. The general health is at first unaffected and may remain so even at the commencement of the formation of metastases. Metastasis is rapid and general, abdominal organs, and next in frequency lungs, being affected. The growth is often highly malignant. Microscopically, the growth originates in the testis and contains representatives of all the embryonic layers; commonly it is the hypoblastic portion which assumes malignant properties. Involvement of the liver by secondary growth is shown (as with other malignant growths) by the diminution of creatinin and the appearance of creatin in the urine. With such alteration the removal of the primary growth can be only palliative.

3. **Enucleation of the Tonsils with the Guillotine.**—Whillis and Pybus favor enucleation of the tonsils with the guillotine. In order to carry out complete removal some form of enucleation is generally necessary, and this has usually been per-

formed by means of dissecting forceps or other blunt instruments. The guillotine as generally used removes little more than the projecting portion of the tonsil, and in that large class of cases where there is no projection beyond the faucial pillars the guillotine is considered inadequate or no operation is performed at all. In some cases the tonsil is completely enucleated with the guillotine, but this is the exception rather than the rule. By a special method of using the guillotine they have been able in nearly fifty per cent. of all cases, including tonsils of all shapes and sizes, to enucleate the tonsil complete in its capsule in one piece. In other cases it is possible to remove the tonsil in two or more pieces even to the last fragment of capsule. They use for their operation ethyl chloride, and when under its influence the patient is turned partly over on to the right side, the head lying on its right side on a level with or slightly above the trunk, so that the cheek pouch is on a lower level than the fauces and that blood may readily collect and run out of the mouth. The gag is then opened. The guillotine, a Lennox Browne's modification of the McKenzie, with the shaft specially thickened, is first used as a tongue depressor and the lower tonsil seen. The operator stands facing the patient's head and on the right side. The guillotine being held in the right hand, the ring is passed under the lower border of the tonsil, which is pressed upward toward the soft palate. The left index finger is then placed on the outer part of the anterior pillar of the fauces and presses the tonsil into the ring. At this time the blade is gradually pressed home with the thumb of the right hand. It enters between the tonsil and the anterior pillar, cutting the mucous membrane connecting the two. While cutting, the hand is gradually pronated, so that the under surface of the guillotine looks inwardly and finally upward, the tonsils being separated from the pharyngeal wall during this manœuvre; the final cut severs the mucous membrane connecting it to the posterior pillar. The tonsil is then lifted out on the under surface of the guillotine, which is now uppermost. The right tonsil, that lowest down, is removed first. To remove the upper tonsil the patient is rolled back so that the head lies in the dorsal position. The patient is readily turned by a nurse who stands opposite the surgeon. The operator now passes to the side of the patient, the guillotine is again inserted, and the ring passed below and behind the tonsil, which is pressed upward toward the soft palate, the left index finger being again used to force the tonsil into the ring. The connections are cut through as described, the hand being meanwhile pronated and the tonsil removed on the under surface of the guillotine, which has become uppermost. Any hyoid projection can now be felt and if present removed. In less than half the cases the tonsil can be felt to slip into the ring, and in these instances it frequently comes out entire. In others it will not wholly engage, and one can say definitely that two or more attempts will be necessary to remove the whole tonsil. The hæmorrhage is sharp for the moment, but soon stops entirely. Each tonsil is examined immediately after removal. If incomplete, the remainder, which can be readily felt by the finger inserted between the faucial pillars, is then removed.

MEDIZINISCHE KLINIK.

September 18, 1910.

1. Ocular Attacks of Gout, By E. KRUECKMANN.
2. Retention of Bromine after Administration of Bromides and the Influence Exerted upon it by the Addition of Common Salt, By ALEXANDER ELLINGER and YASHIRO KOTAKE.
3. Local Immunization of the Places of Entrance of Infections, By HEINRICH LIPPMANN.
4. Autolysis and Metabolism, By ERNST LAQUEUR.
5. Psychic Disturbances after Strangulation, By E. MEYER.
6. Rare Complications of Cholelithiasis, By O. SAMTER.
7. Pulsating Varices in Insufficiency of the Tricuspids, By G. JOACHIM.
8. Cardiac Stasis, By MAX LISSAUER.
9. Polycythæmia and Softening of the Brain, By KURT GOLDSTEIN.
10. Late Recurrence of Carcinoma of the Uterus, By M. SEMON.
11. Acute Lymphæmia, By WALTER CARL.
12. Investigation of the Action of Ehrlich's Arsenobenzol in Syphilis (*Continued*),
13. The Importance of Hæmochromogen and Its Crystals in the Forensic Demonstration of the Blood, By G. PUPPE and W. KUERBITZ.
14. Artificial Production of Speech Sounds, By OTTO WEISS.

1. **Ocular Attacks of Gout.**—Krueckmann emphasizes the point that all the clinical signs that characterize a typical attack of gout may be met with in the eyeball and that such an attack may occasionally be the first clinical sign of the disease. He reports six cases all characterized by a sudden attack of pain at night with remission in the daytime. There was marked swelling of the conjunctiva, which may amount to chæmosis, together with extensive hyperæmia, particularly of the deep vessels. The swelling of the lids and the intense tenderness to the slightest touch and even to movements of the head were especially marked. In some cases the great disproportion between the slight changes within the eye and the excessive symptoms was notable. Finally in spite of the severe attacks and the stormy symptoms complete recovery may take place and functional disturbances very seldom persist. The diagnosis of an attack of intraocular gout is of importance because it may easily be confounded with an attack of acute glaucoma, and the distinction is not made easier by the fact that true glaucoma very often appears in gouty patients.

4. **Autolysis and Metabolism.**—Laqueur asserts that the autolytic ferment plays an important part in life; it guides the removal of the body albumin and so is important to the internal metabolism. If the intravital autolysis is inhibited retention of nitrogen is increased and excretion of qualitatively changed nitrogen takes place. A promoting factor common to a great many different pathological conditions is lack of oxygen in all or some tissues and the resultant acidosis of the blood.

5. **Psychic Disturbances after Strangulation.**—Meyer says that the frequency with which the psychic disturbances after strangulation present the picture of Korsakoff's symptom complex proves that the chief part played in the production of these nervopsychic consequences is by the direct injuries produced by the strangulation and not by the psychogenous factor.

6. **Rare Complications in Cholelithiasis.**—Samter reports two cases of rare complications in cholelithiasis: In one case there was an intermittent

escape of bile and of the pancreatic secretion from a biliary fistula, in the other a round worm escaped from a biliary fistula.

10. **Late Recurrence of Carcinoma of the Uterus.**—Semon reports a case in which carcinoma recurred nearly ten years after a vaginal total extirpation of the uterus, and another in which recurrence took place at the end of five years.

12. **606.**—In order to obtain in brief form their experience with 606 the *Medizinische Klinik* sent to a number of investigators a series of ten questions with the request for an answer. The questions covered: 1, The sort of solution used for injection and the size of the dose tolerated; 2, after effects; 3, effects in primary affections; 4, effects in secondary symptoms; 5, effects in the late forms and gummatous diseases of the internal organs; 6, effects in metaluetic diseases; 7, failures; 8, duration of the cure; 9, recurrences; 10, effect upon the Wassermann reaction. Replies thus far published are from Jadasohn, Herxheimer, Linser, Bering, Cramer, Spiethoff, Welander, Pinkus, Brandenburg, Rille, Wolters, Buschke, Treupel, and Juliusberg. The answers to the first question showed a great lack of uniformity in the solution employed, while the maximum dose varied from 0.5 to 1 gramme. Some writers had tried more than one solution and gave comparative after effects, which were mainly local pain, elevation of temperature, infiltration, and sometimes other symptoms that were usually transient and not serious. The effect in the primary disease was good and prompt in most cases, but there were quite a number of exceptions. The same seems to be a fair summary of the answers to the fourth and fifth questions. With regard to metaluetic diseases most of the answers read "no experience," and several of the others that the period of observation has been too short to permit of any conclusions. Failures were few in number and usually ascribed to too small a dose. The permanence of the cure cannot be told as yet. Recurrences have been met with several times. The observations on Wassermann's reaction did not give uniform results.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 13, 1910.

1. The Operative Mobilization of Ankylosed Joints, By Payr.
2. Acute and Chronic Streptococcus Sepsis and Its Relation to Acute Articular Rheumatism, By Steinert.
3. The Functional Testing of the Pneumogastric Nerve in Man, By Hering.
4. The Action of Ehrlich-Hata's Preparation, of Arsenophenylglyzin, of Potassic Iodide, and of Mercuric Chloride upon Wassermann's Reaction, By Schwartz and Flemming.
5. Sophol in Ophthalmia Neonatorum, By von Herff.
6. Phenol and Camphor as the Prototype of the Symptomalogically Acting Antipyretics, By Harnack.
7. Physiological Valuation of Drugs, Particularly of Digitalis, By Straub.
8. A Simple Method of Counting the Eosinophile Leucocytes and the Practical Value of this Examination, By Dunger.
9. The Ætiological Relations of Syphilis to Idiocy, By Brueckner.
10. The Course and Result of Chronic Thyreoiditis, By Riedel.
11. The Biological Action of the Radium Rays, By Werner.
12. Resuscitation by Artificial Respiration, By Kuhn.
13. Serious Accidents in the Use of Menthol Preparations in Infancy, By Koch.
14. A Casuistic Contribution to the Phlegmonous Form of Phlegmasia Alba Dolens Puerperarum, By Durlacher.
15. The Cigarette Drain, By Geuer.
16. Neurological and Psychiatrical Impressions Obtained in a Journey around the World, By Lilienstein.

1. **Operative Mobilization of Ankylosed Joints.**—Payr gives in considerable detail the technique of opening ankylosed joints, breaking up the adhesions, and measures to prevent the reformation of the adhesions, as applied to many different joints.

2. **Acute and Chronic Streptococcus Sepsis.**—Steinert says that endocarditis lenta may be produced not only by the *Streptococcus viridans* but also by other nonhæmolytic streptococci, while these germs, particularly the viridans, can induce acute septic infections. The chronic infections are always in old rheumatics, who usually, though not always have an old endocarditis, while the acute cases show no rheumatism in their previous history. Chronic bacteriæmias that resemble in their course endocarditis lenta have been met with only in rheumatics. The author therefore raises the question whether there is not a change in the reactive capacity of the body previously infected with rheumatism to certain streptococcus infections, especially that of the viridans.

4. **The Action of 606, Arsenophenylglyzin, Potassic Iodide, and Mercuric Chloride upon Wassermann's Reaction.**—Schwartz and Flemming conclude that 606, arsenophenylglyzin, potassic iodide, and mercuric chloride in no condition of attenuation possess hæmolytic properties, but properties which inhibit hæmolysis only in very high concentration.

5. **Sophol.**—Von Herff recommends sophol as the preparation of silver best fitted for general use in ophthalmia neonatorum, not only as a prophylactic, but also for the treatment of the disease.

8. **A Simple Method of Counting Eosinophile Leucocytes.**—Dunger dilutes the blood in the proportion of 1.10 with the following solution: One per cent. aqueous solution of eosin; aceton. āā 10; distilled water, 100. The eosinophiles can then be seen in the bright rose field as roundish spheres composed of shining red granules and can be easily recognized even by the inexperienced. They can then be counted much more readily than after preparation in the older ways. He considers that the eosinophiles form a very sensitive reagent in the various infectious diseases and furnish a valuable aid to the prognosis.

WIENER KLINISCHE WOCHENSCHRIFT.

September 15, 1910.

1. The Resistance of the Syphilis Spirochætæ to Mercury together with Remarks Concerning Treatment with Ehrlich-Hata's 606, By M. Oppenheim.
2. The Occurrence of Tubercle Bacilli in the Circulating Blood, By Stephen Acs-Nagy.
3. A Case of Operative Cure of the Simple Ulcer of the Colon, By Gobiet.
4. Injuries and Diseases of the Œsophagus, By Karl Ewald.
5. Trade Morbidity and Mortality in Leipsic and Vienna, By Rosenfeld.

1. **Resistance of Spirochætæ to Mercury.**—Oppenheim says that there is no doubt of the dele-

terious action of mercury upon spirochætæ, but that there are cases in which mercury is more or less inefficient from the beginning and others in which a power of resistance is developed. This theory helps to clear up some dark places in the treatment of syphilis, the inefficiency of mercury from the first in some cases, the later inefficiency gradually growing greater in the course of prolonged treatment, the unfavorable influence exerted upon syphilis, and the efficiency of mercury by combination with certain other drugs, like quinine, the greater efficiency of mercury after long pauses, and the favorable results obtained by a change of the kind of mercurial treatment can be understood better. We also comprehend better the varying results of observations of the spirochætæ in syphilitic products under the influence of local and general mercurial treatment, the differing behavior of the pallidæ as regards mobility and form in mercurial solutions, and the unequal efficiency of prophylactic methods that depend on the power of mercury to kill spirochætæ. By this theory we narrow the idea of predisposition, although it cannot be denied that this must play a very important part in the action of mercury upon spirochætæ. Oppenheim then reports a case of fresh syphilis that came under treatment about three weeks after infection in which all symptoms disappeared in three days after an injection of 606, had a recurrence of the eruption five days later with pallidæ that were resistant to both mercury and arsenic. This was the first marked failure he had observed of Ehrlich's treatment in fresh syphilis which could be ascribed neither to too small a dose nor the kind of symptoms presented, and it raises the question whether it is not possible that there are stocks of spirochætæ which are resistant to arsenic.

2. **Tubercle Bacilli in the Circulating Blood.**—Acs-Nagy concludes from his studies on this subject that tubercle bacilli may be present in the blood serum in local pulmonary tuberculosis without inducing a general miliary infection; and as the evidence of the presence of the bacilli can be found weeks and months before death the presence of tubercle bacilli in the blood of patients with local pulmonary tuberculosis is not a symptom of nearly approaching death, as some have believed.

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Proceedings of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-eighth Annual Meeting Held in Milwaukee, September 6, 7, 8, and 9, 1910.

The President, Dr. Charles O. Probst, of Columbus O., in the Chair.

(Concluded from page 694.)

Executive Methods in Preventive Medicine.—Dr. Henry B. Hemenway, of Evanston, Ill., said that health administration was formerly local in nature. The science of public health had now advanced far beyond administration, especially in this country. The American law required a separation of the three branches of government. Health administrators, being of the executive branch, had no legislative power. They might not issue any orders, or regulations except as distinctly provided in the laws under which they were acting. All health authority was derived from the police power of the State. Police power was a system of precaution for the prevention of crimes and calamities. It was a necessary but also a dangerous power; and because of the danger to individual liberty, the courts were inclined to scrutinize its operations closely to prevent abuse. The policing of public health started from the idea of nuisance, and presupposed legislative determination in great detail.

Even though administered by municipal officers, public health work was essentially State in nature; and in the absence of special constitutional provisions to the contrary, the State had the right to appoint and regulate the acts of municipal health officers. The protection of the State against damage suits was extended to all health officials, so long as they acted within the law, even though error had been committed and damage resulted to individuals. As compared with other countries, American State executives were ill organized and weak; and one of the weaknesses was shown in the tendency to the appointment of boards, often serving without pay. Since executives had no legislative power, executive boards lacked in responsibility, decision, activity, and dispatch, without compensatory advantage. There was no more reason why a physician should give his public health service than why a lawyer should serve without pay as a judge or a banker should give the use of the money needed for public improvements. Health laws should be enacted by the State legislature. The entire health administration of a State should be recognized as one body, having a single head, to whom all local and district officials were responsible. Every man should be held responsible for a definite portion of the work.

Executive duties were either ministerial or discretionary. If ministerial, the officer might only do that which was required. If discretionary, he might do anything within that discretion; but neither his acts nor legislation for his guidance might be arbitrary or unreasonable. If the officer acted beyond the provision of the law, he might be sued as a private wrong doer. Health legislation should be definite, not in general terms, to safeguard individual liberty.

Matters of technical detail in the work of the office might be largely left to subordinates; but the executive must personally and frequently decide upon questions of administration. Such knowledge of administrative law as would give confidence in execution, celerity of decision, and definiteness of effort would increase effectiveness. In other words, the head of the department should be a professional adminstrator with a broad knowledge of sanitary science, not merely a sanitarian or a party politician. At least once a year there should be a conference of State and district officers at which proposed legislation might be discussed and prepared for presentation to the legislature for enactment.

Dr. C. A. Harper, of Madison, Wis., discussed the relation between State and municipal boards of health, saying that the interchange of ideas, and the knowledge required by each health officer in knowing how other health officers did their work and met certain emergencies, fully justified the labor and expense incident to holding State or district conferences. If the health officer expected to impart knowledge to others, he must know his subject thoroughly and realize the important rôle which sanitation and public hygiene played in the prevention of diseases.

Dr. GUSTAV F. RUEDIGER, of Grand Forks, N. D., spoke of the relation of the State University of North Dakota to the State board of health, and favored placing the State board of health laboratory under the control and regulation of the State university, under the direction of the professor of bacteriology and pathology.

Dr. CHARLES A. HODGETTS, of Ottawa, Canada, pointed out the functions of the Canadian Commission of Conservation and Public Health.

Dr. H. W. HILL, of Minneapolis, spoke of the relations of universities to public health work.

MAYOR SEIDEL, of Milwaukee, discussed social economics and public health. He said that land had a value, timber had a value, and so had water and mineral deposits. These, with machinery, were important factors in wealth production. But the most important factor of all in wealth production was human labor. Without labor of hand and labor of brain applied to raw material, there was no civilization thinkable. The greatest of all natural resources was human life with its accompaniment of labor. It was good and excellent work to conserve land and timber and water utilities, but it was far more important and far more fundamental to conserve human life and make it more efficient and give it added ability and power to create.

Mr. FREDERICK ALMY, of Buffalo, N. Y., spoke of the interrelation of national organizations working in the interest of health.

Dr. FREDERICK MONTIZAMBERT, director general of public health of Canada, said that the administration of the subject of public health in that country was joint between the Dominion and the Provinces. The administration of the subject of quarantine pertained solely to the Dominion government, including the inspection and treatment of passengers, crews, and vessels from abroad arriving at the different seaports on the Atlantic and Pacific Coasts, and of the persons and trains entering Canada over the international frontier. Leprosy was dealt with by the Federal government. The adulteration of foods and drugs was dealt with by the Department of Inland Revenue. Infectious and other diseases occurring within the Dominion were under the administration of the provincial and municipal authorities.

Yellow Fever and the Mexican Republic.—Dr. E. LICEAGA, of Mexico City, contributed a paper in which he stated that from the 20th of December of last year not a single case of yellow fever had been observed either there or in any other part of the Mexican Republic. In spite of the success obtained, the sanitary service continued its action with the same regularity as in previous years, although it was not directing its energies especially against malaria.

Quarantine or Isolation in Diphtheria.—Dr. JAMES ROBERTS, of Hamilton, Ontario, stated in this paper that he first established the fact of the dominance of the personal contact factor in the spread of this disease. Defective drains, bad ventilation, etc., although prejudicial to health, could not cause diphtheria, which was due to the presence of certain bacteria. Overcrowding assisted the spread of diphtheria. Forty-five per cent. of his cases, representing not more than one quarter of the school population, came from the districts where the industrial classes were centered. The presence of an ignorant foreign element hindered the work of sanitation and favored the spread of disease. Diphtheria, owing to the manner by which it was spread, was a school disease. The Boston Board of Health, after an exhaustive investigation, concluded that it would be impracticable to isolate bacillus carriers who did not themselves suffer from the disease, as they constituted one per cent. of all healthy school children, and these germs were ordinarily of little virulence. The restriction of this disease was for practical purposes limited to isolation of clinical cases and control of the contacts in connection with these. Where isolation could not be strictly carried out at home, hospitalization was the best method. But isolation hospitals were very unpopular, owing to their usually poor equipment, the danger of cross infection, etc. They safeguarded the community, but often at the expense of the individual. Our present day conception of diphtheria as preeminently a school disease made it imperative that the inspection of school children should be thorough enough for the detection of early cases and of those children harboring virulent bacilli. When this had been accomplished, regulations intelligently enforced, providing for the proper isolation of all cases either at home or in suitable institutions, would be productive of better results and much less annoyance and hardship than the continued enforcement of antiquated laws and regulations incompatible with our present knowledge of diphtheria.

The Ventilation of Sleeping Cars.—Dr. T. R. CROWDER, of Chicago, stated that the only available method of accurately estimating the air supply of running cars was by determining the amount of carbonic acid gas which their atmosphere contained, and from this computing the amount of air which entered. The problem was mathematically simple, and rested upon the known amount of carbonic acid thrown off by the respiration.

This method had been applied in the study of sleeping car ventilation. Some 2,000 samples of air had been analyzed from these cars. It showed that an average of approximately 40,000 cubic feet of air was supplied hourly to the main sleeping compartment of standard cars, which were equipped with the ventilating system now in common use by the Pullman Company, and that the amount was rarely, if ever, under 20,000 cubic feet. There were rarely more than twenty people in a sleeping car; hence each person was supplied with some 2,000 cubic feet of air each hour. This applied to the findings in occupied berths, both lower and upper, as well as to the car in which the berths were not made up.

The high wind pressure to which running railway cars were subjected resulted in fair ventilation even when they had no special ventilating devices. The amount of air which they received would vary from 15,000 to 50,000 cubic feet per hour, depending upon various conditions.

When cars were uncomfortable and felt "stuffy," the fault was not generally to be laid to an insufficient air supply, as was commonly supposed. It rarely happened that the air supply was so inadequate as to bring about this condition, though it might at times contribute to it. The fault generally lay chiefly in an improper control and regulation of the heat supply. The degree of humidity of the atmosphere was also a very important factor; but its control was difficult, and often impossible. In the opinion of the author, heat control was a more important problem in maintaining comfort in sleeping cars than was the furnishing of a great air supply, and relatively greater attention should be concentrated upon this element of the problem of maintaining a hygienic atmosphere in cars.

Dr. JOHN A. AMYOT, of Toronto, Canada, discussed the laboratory in its relation to public health, and Dr. WILLIAM A. EVANS, of Chicago, spoke of efficiency and economy in municipal health work.

The Association endorced the principles embodied in the Senator Owen bill for the establishment of a national department of health.

A resolution was adopted recommending that a committee be appointed to consider and report next year a scheme (of which Dr. Probst should be chairman) for instruction in hygiene and sanitation in high schools and in colleges and universities, with a view to bringing the necessity for such instruction with definite recommendations to the attention of educational authorities.

A new section to be known as the Section in Sociology was formed, also one to be known as the Section in Sanitary Engineering.

Disinfection after Communicable Diseases.—The following resolution was adopted:—

WHEREAS, A considerable number of municipal health officers believe terminal disinfection at the conclusion of communicable diseases is of questionable value and extravagant in practice; and

WHEREAS, A few municipal health officers of sound judgment and highest attainment have abandoned this practice as a prophylactic measure; therefore, be it

Resolved, That the Municipal Health 'Officers' Section refer to the Executive Committee a recommendation that the American Public Health Association appoint a committee to study the end results and practice in communities where terminal disinfection is no longer practised at the conclusion of cases of communicable diseases.

The following resolutions were also adopted.

Resolved, That this association appoint a committee to cooperate with the Census Bureau in establishing standard methods of accounting for municipal sanitation.

Resolved, That this association offers and accords its hearty approval and commendation of the educational work carried on by the *Ladies' Home Journal* regarding the necessity and ways of teaching children the truth about reproduction and the sexual life.

Officers Elected.—The following officers were elected: President, Dr. Robert M. Simpson, of Winnipeg, Manitoba; first vice-president, Dr. Fernando Lopez, of Mexico City; second vice-president, Dr. John F. Anderson, of Washington, D. C.; third vice-president, Dr. B. A. Bading, of Milwaukee; secretary, Dr. WILLIAM C. WOODWARD, of Washington, D. C.; treasurer, Dr. Frank W. Wright, of New Haven, Conn.

Laboratory Section.—Chairman, Dr. J. F. Amyot, of Toronto, Canada; vice-chairman, Dr. John F. Anderson, of Washington, D. C.; secretary, Mr. B. R. Rickards, of Columbus, O.; recorder, Dr. H. D. Pease, of New York.

Vital Statistics Section.—Chairman, Dr. Wilmer R. Batt, of Harrisburg, Pa.; vice-chairman, Dr. C. V. Chapin, of Providence, R. I.; secretary, Dr. F. L. Watkins, of Columbus, O.

Municipal Health Officers' Section.—Chairman, Dr. A. J. Douglass, of Winnipeg, Manitoba; vice-chairman, Dr. Frederic Torralbas, of Havana, Cuba; secretary, Dr. E. C. Levy, of Richmond, Va.

Havana, Cuba, was selected as the place for holding the next annual meeting.

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Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Manual of Surgery. By ALEXIS THOMSON, F. R. C. S. Edin., Professor of Surgery, University of Edinburgh, and ALEXANDER MILES, F. R. C. S. Edin., Surgeon to the Royal Infirmary. In Two Volumes. Volume I: General Surgery. Volume II: Regional Surgery. Third Edition, Revised and Enlarged. With 339 Illustrations in Volume I and 227 Illustrations in Volume II. Edinburgh, Glasgow, and London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1909. Pp. xx-886 in Volume I, and xiv-861 in Volume II. (Price, $7.)

The popularity of this very practical work is shown by the appearance of a third edition in two years from the publication of the second. The authors have curtailed as far as possible the discussion of theoretical and debatable matter; they have not described histological appearances that are more appropriately dealt with in a textbook on histology; they have described pathological processes only so far as they bear on diagnosis and treatment; and they have recast the text and added sections on Bier's method, on serum and vaccine therapy, on the *Spirochæta pallida,* on Schlatter's disease, on Modelung's deformity, and on the snapping hip. The arrangement of the text is convenient and practical, and we know of no work on this subject that is likely to be more useful to the student or practitioner.

The Diseases of Infancy and Childhood. Designed for the Use of Students and Practitioners of Medicine. By HENRY KOPLIK, M. D., Attending Physician to Mount Sinai Hospital, etc. Third Edition, Revised and Enlarged. Illustrated with 204 Engravings and 39 Plates in Color and Monochrome. New York and Philadelphia: Lea & Febiger, 1910. Pp. xii-844. (Price, $5.)

The author has availed himself of the opportunity afforded by preparing a new edition of his work to give it a thorough revision and add the results of his greater experience. Much has been added, and the chapters on infant feeding, diseases of the stomach, cerebral palsies, encephalitis, poliomyelitis, tetany, amaurotic idiocy, cystitis, and pyelitis have been revised, and sections have been added on idiocy and dwarfism. There are many new illustrations, and in all ways the volume is thoroughly up to date.

Emergencies of General Practice. By PERCY SARGENT, M. B., B. C. (Cantab.), F. R. C. S., Surgeon to Out Patients, St. Thomas's Hospital, etc., and ALFRED E. RUSSELL, M. D., B. S. (Lond.), F. R. C. P., Physician to Out Patients, St. Thomas's Hospital. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xi-364. (Price, $5.50.)

The purpose of this book is to consider in a concise form for easy reference certain acute and urgent conditions that require prompt recognition and treatment; and the aim has been to direct those measures that will relieve urgent symptoms so that when that is accomplished exactitude of diagnosis may be sought for. The opening chapter is on anæsthetics in procedures of urgency, ether being advocated for general and novocaine for local anæsthesia, and the treatment of respiratory and circulatory complications is detailed. The chapters on wounds and hæmorrhage are very practical, and in that on burns and scalds we have the up to date advice of using strychnine or adrenalin hypodermically and applying picric acid solution to the injury. There are chapters on fractures, injuries of joints, acute infective diseases, foreign bodies in the respiratory, alimentary, and urinary tracts, emergencies of respiration, injuries of the chest, affections of the respiratory system and of the heart, acute abdominal disease, injuries of the abdomen and pelvis, hernia, injuries and diseases of the nervous system, injuries and acute affections of the ear and of the eye, and poisoning. In the section on convulsions in children, the need of gastric and colonic lavage while the child is in the tub should be mentioned. The book is essentially practical and useful.

The Surgery and Pathology of the Thyreoid and Parathyreoid Glands. By ALBERT J. OCHSNER, A. M., M. D., LL.D., Professor of Surgery in the Medical Department of the University of Illinois, etc., and RALPH L. THOMPSON, A. M., M. D., Professor of Pathology in the St. Louis University School of Medicine, St. Louis. With Fifty-seven Illustrations in the Text and Forty Full Page Plates, Four of the Plates being in Colors. St. Louis. C. V. Mosby Company, 1910. Pp. 391.

The subject matter of this volume is divided into Part I, the thyreoid gland, by Dr. Ochsner, and Part II, the parathyreoid glandules, by Dr. Thompson. Dr. Ochsner treats his subject largely from the surgical standpoint, and in referring to the operative treatment of exophthalmic goitre as "one of the most satisfactory conditions in the field of major surgery" (page 9) he eliminates apparently the internist or the neurologist, each of whom has laid claim to this disease; in the chapter on nonsurgical treatment, however, he remarks that the treatment of all forms of nontraumatic and nonmalignant diseases of the thyreoid gland are primarily medical, and states that more than half his patients affected with thyreoid disease recovered under nonsurgical treatment. The choice of anæsthetics, the dangers of an operation, the operative indications, and the technique of thyreoidectomy and other operations on the thyreoid gland are described in detail and with admirable illustrations.

The anatomy, histology, embryology, and pathology of the parathyreoid glandules are reviewed, their relation to postoperative tetany described, and surgical accidents due to their removal mentioned. The volume is generously illustrated.

Duodenal Ulcer. By B. G. A. MOYNIHAN, M. S. (Lond.), F. R. C. S. Leeds. Illustrated. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 379. (Price, $4.)

The advantage of specialization could not be shown better than by the author's statement that what was considered a rare disease a few years ago is now found to be comparatively common and that he can diagnosticate it with a degree of accuracy that is not exceeded in the case of any other abdominal disorder. It is most important for the patient's welfare that the symptoms that were believed formerly to be due to derangements of the stomach or duodenum are now known to be caused by changes in the texture of one or other of these organs.

Duodenal ulcer due to burns or scalds, to tuberculous disease, and to chronic inflammation are described, and the author considers that the only difficulty likely to be encountered in making an accurate diagnosis is to distinguish that condition from cholelithiasis; the time element, the appearance of pain two hours after eating, is important to distinguish it from gastric ulcer. The treatment should always be surgical, and the technique of operating is described, with excellent illustrations. There is an appendix with a detailed statement of 189 patients with this lesion who were operated on by the author to the end of 1908, of whom 73.6 per cent. were males and 26.4 per cent. were females; the youngest patient was seventeen, but the largest number of cases occurred in those between thirty-one and forty years old. The longest duration of illness before operation was forty years and the shortest was seven weeks. The mortality of the whole series was 1.6 per cent. and among the last 121 cases there was no death. This volume justifies the high reputation of the author and is a valuable contribution to surgical literature.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B. A., M. D., LL. D. (Yale), Professor of Surgery in Cornell University Medical College, New York, etc. Sixth Edition, Revised and Enlarged. With 361 Illustrations and 65 Plates in Monotint. New York and Philadelphia: Lea & Febiger, 1910. Pp. xx-876. (Price, $5.)

This new edition of Dr. Stimson's authoritative work presents us with an extended study of the injuries of the small bones of the carpus and tarsus, including midcarpal fracture dislocation, that is, a fracture of the scaphoid, dislocation forward of the semilunar and the proximal fragment of the scaphoid, and more or less derangement of the relations of the os magnum with the adjoining bones. There have been additions to the text in the sections on fractures of the floor of the acetabulum and of the internal epicondyle of the femur, in that on backward dislocation of the lower jaw, and in the remarks on the treatment of many injuries. There are a number of new illustrations, and the high standard of the work has been maintained.

MEDICOLITERARY NOTES.

James Oppenheim has written a novel, *Wild Oats,* which treats of the inadvisability of marriage on the part of a young man suffering from an improperly treated gonorrhœa. Our fictional colleague, Dr. Morris Rast, plays a prominent rôle, and there is an introduction by Edward Bok. We think the book should have a wide sale notwithstanding its faults. It is sentimental and theatrical to the point of absurdity; Nature is called upon to furnish a thunderstorm as a background to the scene where Dr. Rast discovers under his microscope a diplococcus from the hero's person. We hope this hyperdramatic sentimentality, however, will have the effect of circulating the novel among those who need it. Latent gonorrhœa is the cause of many a domestic tragedy and is likely to blast the life of a married woman; knowledge of its probable existence in a man who has led a fast life should be possessed by prospective brides and fathers in law. A direction given by a physician to read this story might save years of anguish where the medical adviser felt obliged by professional secrecy to give no direct information.

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After searching vainly through many stories, otherwise interesting, in the September *Red Book* in quest of a physician whose personality or adventures might entertain our friends, we happened hopefully upon A Tonic for Tired Women, by Pearl Wilkins. The tonic, however, turned out to be a new frock and a trip to the circus, which had most excellent revivifying effects on the patient, an overworked farmer's wife. We understand that fashionably cut gowns and visits to the circus are not now considered either ungodly or sinfully extravagant, as they were in our boyhood, which is a fortunate thing for farmers and their families. We remember that country families used to contribute more than a fair percentage of patients to the lunatic asylums. This must have been due not only to long hours and grinding work, but to the character of bucolic amusements; sewing circles and church sociables laid the last unendurable strain upon the tired nervous systems.

* * *

While some good must be accomplished by a magazine like *Physical Culture* in leading young persons to exercise their bodies, the enthusiasm of the editor leads him to unjustifiable lengths in his September issue. He writes of massage and exercise not only as preventive of appendicular inflammation, but as curative. Listen to this amazing extract: "About the only stage of the disease in which an operation could even be reasonably considered, is when morphine has been used to deaden the severe pain connected with the disease. Under such circumstances almost complete paralysis is often induced in the alimentary canal, and with the foul fæcal contents thus retained, in some instances the appendix becomes perforated and gangrenous, and pus exudes into the abdominal wall. Under such circumstances an operation may be advisable, although personally I would not advise it even then. Under the influence of natural treatment I believe far more cases, even of this advanced type, can be saved without an operation than with it." No recognition here of infection, the greatest enemy of humanity.

Another article in the September *Physical Culture* in which infection and its phenomena are ignored is by the editor and treats of diphtheria. Patients are instructed to treat their children stricken with this disease themselves by the internal use of hot water, a little olive oil, and starvation. "Remember that drugs are not of the slightest use and that antitoxine is dangerous," concludes the omniscient editor.

* * *

One more extract from the September *Physical Culture* is worth reproducing, as showing the kind of pathology fed to various kinds of antipanta faddists. This is from an article by Raymond Duncan, the apostle of Greek dress: "Dirt produces certain forms of vibration. These different forms we may say are sometimes known under the name of decomposition. Dirt always produces decomposition, and decomposition is nothing more than the form of vibration which disintegrates matter. And every one of you—every one of your bodies are (*sic*) being disintegrated by the vibrations caused by the dirt in your outer clothing. The gases that are arising in your body and being held captive in your clothes decompose, and the decomposition of these gases sets forth vibrations that go right into your very health itself."

* * *

A recent writer on the evolution of hygiene is disposed to think that because there were regulations concerning the practice of medicine and dispensing of drugs in the Middle Ages there must have been also sanitary regulations. To the minds of that time there was no appreciable connection between disease and cleanliness. Disease, as taught by Origen, St. Augustine, and others, was due to devils, and the great remedy was contact with relics. We have an accurate knowledge of the unspeakable personal hygiene of the court of Louis XV, where gallons of perfumery were used to disguise the effluvia from the persons of the courtiers. Even at that comparatively late date there was nothing like any scientific drainage. And, as Mark Twain remarked in one of his books, whenever we find shocking conditions of personal or moral hygiene at a given period, we may be sure that conditions were even worse in earlier centuries. Hygiene distinctly took its rise in the nineteenth century, and any one who cares to observe our recently landed immigrants from southern Europe will be speedily convinced that its principles are still unknown to them, while to attribute to them any inkling of a connection between dirt and disease would be absurd. The lack of cleanliness in rural Europe is the despair of practitioners, and magical remedies still hold potent sway.

* * *

"Of solid silver, wrought with a design of olives at the base, with fleur de lis at the top, the handles at each end springing from lions' mouths, the four legs modeled on those of a goat; eleven inches in height, twenty-three in length, seventeen in width; weight, about 112 lbs." Does the reader wonder what might have been the nature of this superb piece of jewelry? It was the favorite cuspidor of Louis XIV, and is probably not surpassed for vulgar magnificence in any of our best hotels.

NEW PUBLICATIONS.

Kelly, A. O. J.—The Practice of Medicine. A Guide to the Nature, Discrimination, and Management of Disease. Illustrated. Philadelphia: Lea & Febiger, 1910. Pp. xix-945. (Price, $4.75.)

Weeks, John Elmer.—A Treatise on Diseases of the Eye. With 528 Engravings and 25 Full Page Plates in Colors. New York and Philadelphia: Lea & Febiger, 1910. Pp. ix-944. (Price, $6.)

Hoxie, George Howard.—Symptomatic and Regional Therapeutics. With Fifty-eight Illustrations in Text. New York and London: D. Appleton & Co., 1910. Pp. xviii-499.

Brundage, Albert H.—A Manual of Toxicology. A Concise Presentation of the Principal Facts Relating to Poison, with Detailed Directions for the Treatment of Poisoning. Also a Table of Doses of the Principal and Many New Remedies. Seventh Edition, Revised and Profusely Illustrated. New York: Henry Harrison Company; London: Baillière, Tindall, & Cox, 1910. Pp. x-428.

Albarran, J.—Operative Chirurgie der Harnwege. Normale Anatomie und chirurgische pathologische Anatomie. Ins Deutsche übertragen von Dr. Emil Grunert, Spezialarzt für Chirurgie in Dresden. Zweite Lieferung. Mit 157 teils farbigen Figuren im Text. Jena: Gustav Fischer, 1910. Pp. 321-720.

Kärcher, Max.—Epidemische Kinderlähmung. Bericht des Komitees für die Sammelforschung bei der New York Epidemie von 1907. Autorisierte deutsche Ausgabe von Dr. Max Kärcher. Mit einleitenden und ergänzenden Bemerkungen von Dr. Krause, o.ö. Professor an der Universität Bonn, Direktor der medizinischen Poliklinik. Mit 3 Tafeln, 3 Kurven und 4 Uebersichtskarten. Jena: Gustav Fischer, 1910. Pp. 123.

Schridde, Hermann.—Studien und Fragen zur Entzündungslehre. Jena: Gustav Fischer, 1910. Pp. 50.

Lynch, Charles, and Shields, M. J.—American Red Cross Abridged Textbook on First Aid. Industrial Edition. A Manual of Instruction. Prepared for and Endorsed by the American Red Cross. With Forty-nine Illustrations. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xii-175. (Price, 30 cents.)

Buttner, J. L.—A Fleshless Diet. Vegetarianism as a Rational Dietary. New York: Frederick A. Stokes Company, 1910. Pp. v-287.

Transactions of the Thirty-second Annual Meeting of the American Laryngological Association, held at Washington, D. C., on May 3, 4, and 5, 1910. Pp. 277.

The Pittsburgh Tuberculosis League: What it is and What it Does.

Infantile Paralysis in Massachusetts in 1908 and 1909. Reprinted from the Monthly Bulletin of the Massachusetts State Board of Health for July, 1909, and June, 1910.

Sisson, Septimus.—A Textbook of Veterinary Anatomy. With 588 Illustrations, Many in Colors. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 826. (Price, $7.)

Martindale, W. Harrison, and Westcott, W. Wynn.—The Extra Pharmacopœia of Martindale and Westcott. Fourteenth Edition. London: H. K. Lewis, 1910. Pp. xxvii-1054.

Martindale, W. Harrison.—Organic Analysis Chart. A Supplement to the Extra Pharmacopœia. Fourteenth Edition. London: H. K. Lewis, 1910. Pp. 80.

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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, plague, smallpox, and yellow fever were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending September 30, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
Brazil—Rio de Janeiro	Aug. 8-21	1	
India—Bombay	Aug. 17-23		1
India—Calcutta	Aug. 1-6		6
India—Negapatam	July 30-Aug. 12		18
India—Madras	Aug. 13-19		2
Italy—Andria, province	Aug. 27-Sept. 4	9	4
Italy—Barletta, province	Aug. 27-Sept. 4	64	37
Italy—Biotonto, province	Aug. 27-Sept. 4	1	
Italy—Canoso, province	Aug. 27-Sept. 4	4	
Italy—Cerignola, province	Aug. 27-Sept. 4	9	8
Italy—Margherita di Savoia, province	Aug. 27-Sept. 4	12	17
Italy—Molfetta, province	Aug. 27-Sept. 4	28	19
Italy—San Ferdinando, province	Aug. 27-Sept. 4	12	11
Italy—Spinazzola, province	Aug. 27-Sept. 4	8	5
Italy—Trani, province	Aug. 27-Sept. 4	10	9
Italy—Trinitapoli, province	Aug. 27-Aug. 4	47	31
Java—Batavia	Aug. 7-13	20	12
Java—Soerabaya	July 3-15	21	11
Persia—Enzeli	Aug. 20		3
Persia—Erzeroum, province	Aug. 31-Sept. 2	10	8
Roumania—Galatz	Sept. 16	1	1
Russia—General	Aug. 14-20	16.106	7,743
Russia—Astrakhan	Aug. 14-20	194	85
Russia—Baku, city	Aug. 14-20	142	80
Russia—Baku, prefecture	Aug. 14-20	246	92
Russia—Black Sea	Aug. 14-20	16	15
Russia—Cronstadt, city	Aug. 14-20	78	41
Russia—Ekaterinoslaw	Aug. 14-20	1,944	857
Russia—Erivan	Aug. 14-20	197	122
Russia—Iaroslaw	Aug. 14-20	187	107
Russia—Kazan	Aug. 14-20	88	30
Russia—Kertchienikale	Aug. 14-20	30	15
Russia—Kharkow, government	Aug. 14-20	274	159
Russia—Kherson	Aug. 14-20	749	299
Russia—Kieff, government	Aug. 14-20	242	97
Russia—Kostroma	Aug. 14-20	208	71
Russia—Koursk, government	Aug. 14-20	416	206
Russia—Koutais	Aug. 14-20	59	20
Russia—Minsk, government	Aug. 14-20	30	14
Russia—Moguilew, government	Aug. 14-20	15	15
Russia—Moscow	Aug. 14-20	37	20
Russia—Nijni-Novgorod	Aug. 14-20	219	130
Russia—Novgorod, government	Aug. 14-20	29	15
Russia—Odessa	Aug. 14-20	38	26
Russia—Olonetz, government	Aug. 14-20	1	1
Russia—Orel, government	Aug. 14-20	70	29
Russia—Orenburg	Aug. 14-20	189	112
Russia—Oufa	Aug. 14-20	169	105
Russia—Perm	Aug. 14-20	107	32
Russia—Podolia, government	Aug. 14-20	137	64
Russia—Poltava, government	Aug. 14-20	264	107
Russia—Pskov, government	Aug. 14-20	2	1
Russia—Riazan	Aug. 14-20	225	130
Russia—Rostov-on-Don	Aug. 14-20	35	11
Russia—Samara	Aug. 14-20	733	327
Russia—Saratov	Aug. 14-20	780	362
Russia—Sebastopol	Aug. 14-20	11	9
Russia—Simbirsk	Aug. 14-20	738	363
Russia—Smolensk, government	Aug. 14-20	2	1
Russia—Stavropol	Aug. 14-20	480	256
Russia—St. Petersburg	Aug. 14-20	359	176
Russia—St. Petersburg, government	Aug. 14-20	60	41
Russia—Tambow	Aug. 14-20	480	233
Russia—Tauride	Aug. 14-20	216	122
Russia—Tchernigow, government	Aug. 14-20	82	31
Russia—Territory of Akmolinsk	Aug. 14-20	16	9
Russia—Territory of Daghestan	Aug. 14-20	207	116
Russia—Territory of the Don	Aug. 14-20	2,213	1.089
Russia—Territory of Kars	Aug. 14-20	120	600
Russia—Territory of Kuban	Aug. 14-20	1,056	547
Russia—Territory of the Oural	Aug. 14-20	10	8
Russia—Territory of Sir-Daria	Aug. 14-20	17	10
Russia—Territory of Terek	Aug. 14-20	405	161
Russia—Territory of Tourgai	Aug. 14-20	11	7
Russia—Tiflis	Aug. 14-20	187	70
Russia—Tobol	Aug. 14-20	33	8
Russia—Tomsk	Aug. 14-20	8	1
Russia—Toula	Aug. 14-20	10	3
Russia—Tver	Aug. 14-20	1	
Russia—Viatka	Aug. 14-20	34	18
Russia—Vitebsk, government	Aug. 14-20	6	2
Russia—Vologda, government	Aug. 14-20	69	47
Russia—Volynia, Government	Aug. 14-20	6	4
Russia—Voronega	Aug. 14-20	1.119	554
Russia—Warsaw	Aug. 25-Sept. 2	25	28
Straits Settlements—Singapore	Aug. 1-6	7	9
Yellow Fever—Foreign.			
Brazil—Para	Aug. 28-Sept. 3	4	2
Ecuador—Duran	Aug. 16-31	1	
Ecuador—Guayaquil	Aug. 16-31	4	2
Ecuador—Milagro	Aug. 16-31	2	1

Place.	Date.	Cases.	Deaths.
Plague—Foreign.			
China—Amoy	Aug. 15-20		1
Ecuador—Guayaquil	Aug. 16-31	15	2
Ecuador—Rocafuerle	Aug. 16-31	1	
Egypt—Alexandria	Aug. 10-Sept. 6	3	1
Egypt—Assiout, province	Aug. 14-Sept. 7	1	
Egypt—Dakahlieh, province	Aug. 17-26	2	2
Egypt—Garbieh, province	Aug. 17-27	3	2
Egypt—Minieh, province	Aug. 15-19	3	3
Egypt—Port Said	Aug. 17-27	3	
India—Bombay	Aug. 17-23		29
India—Calcutta	Aug. 1-6		7
India—Kurrachee	July 31-Aug. 20	28	26
India—Rangoon	Aug. 7-13		20
Italy—Naples	Sept. 26		Present
Russia—Moscow	Aug. 14-20	1	1
Russia—Odessa	Aug. 21-27	14	6
Smallpox—United States.			
California—Amador County	July 1-Aug. 31	2	
California—Hamlet County	Aug. 1-31	2	
California—Los Angeles County	July 1-31	1	
California—Sacramento County	Aug. 1-31	1	
California—San Francisco County	July 1-Aug. 31	2	
California—San Joaquin County	July 1-Aug. 1-31	4	
California—Santa Clara County	July 1-31	2	
District of Columbia	Sept. 11-17	1	
Illinois—Coles County	Aug. 1-31	8	
Illinois—Cook County, Chicago	Aug. 1-31	2	
Illinois—Madison County	Aug. 1-31	1	
Illinois—Peoria County	Aug. 1-31	1	
Illinois—Richland County	Aug. 1-31	1	
Illinois—Rock Island County	Aug. 1-31	3	
Michigan—Tuscola County	Aug. 1-31	4	
Michigan—Wayne County	Aug. 1-31	2	
North Carolina—General	Aug. 1-31	91	
Smallpox—Foreign.			
Argentina—Buenos Aires	June 1-30		70
Brazil—Bahia	July 30-Aug. 5	20	13
Brazil—Campinas	July 17-23		1
Brazil—Rio de Janeiro	July 18-21	6	
China—Shanghai	Aug. 22-28	2	
Cuba—Habana	Sept. 17	1	
France—Paris	Aug. 30-Sept. 3	2	
Gibraltar	Sept. 5-11	1	1
India—Madras	Aug. 13-19		4
Mexico—Mexico	Aug. 6-20		8
Portugal—Lisbon	Aug. 30-Sept. 3	31	
Russia—Moscow	Aug. 14-27	10	3
Russia—Riga	Aug. 26-Sept. 3	29	
Russia—Warsaw	June 19-25		6
Spain—Almeria	Aug. 1-31		2
Spain—Barcelona	Aug. 29 Sept. 4		1
Spain—Seville	Aug. 1-30		1
Spain—Vigo	Aug. 29-Sept. 4		1
Straits Settlements	Aug. 1-6	33	9

Public Health and Marine Hospital Service:

Offical list of changes in the stations and duties of commissioned and other officers of the United States Public Health and Marine Hospital Service for the seven days ending September 28, 1910:

Barnes, W., Acting Assistant Surgeon. Granted thirty days' leave of absence from October 5, 1910, with pay, and one month's leave of absence from November 5, 1910, without pay.

Clark, E. S., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 13, 1910.

Cleborne, A. B., Acting Assistant Surgeon. Granted seven days' leave of absence from September 24, 1910, under paragraph 210, Service Regulations.

Creel, R. H., Passed Assistant Surgeon. Detached from U. S. R. C. *Takoma* and ordered on shore duty at Unalaska, as fleet surgeon.

Gardner, C. H., Surgeon. Leave of absence for one month from September 1, 1910, amended to read twenty-two days from September 1, 1910.

Gill, S. G., Acting Assistant Surgeon. Granted one day's leave of absence September 17, 1910, under paragraph 210, Service Regulations.

Guthrie, M. C., Passed Assistant Surgeon. Granted one month's leave of absence from October 1, 1910.

Hunt, Reid, Professor, Chief Division of Pharmacology, Hygienic Laboratory. Detailed to attend the Second International Conference for the Study of Cancer to be held in Paris, October 1 to 5, 1910, and the Conference of the International Antituberculosis Association to be held in Brussels, October 5 to 8, 1910.

Kimmet, W. A., Acting Assistant Surgeon. Granted thirty days' leave of absence from September 25, 1910.

Porter, Joseph Y., Quarantine Inspector. Granted thirty days' leave of absence from September 20, 1910.

Rucker, W. C., Passed Assistant Surgeon. Relieved from duty in connection with the suppression of plague in California, and detailed for temporary duty in the Bureau, effective September 22, 1910.

Rush, John O., Acting Assistant Surgeon. Granted ten days' leave of absence from September 24, 1910, without pay.

Ryder, L. W., Pharmacist. Granted extension of leave on account of sickness. Four days from August 24th, and thirteen days from September 1, 1910. Granted seven days' leave of absence from September 14, 1910, under paragraph 210, Service Regulations.

Schuster, B. L., Acting Assistant Surgeon. Granted one day's leave of absence, September 10, 1910.

Scott, E. B., Pharmacist. Granted five days' leave of absence from September 15, 1910, under paragraph 210, Service Regulations.

Sprague, E. K., Surgeon. Granted one month's leave of absence from September 28, 1910.

Stuart, A. F., Acting Assistant Surgeon. Granted thirty days' leave of absence from October 1, 1910.

Wakefield, H. C., Acting Assistant Surgeon. Granted fourteen days' leave of absence from October 10, 1910.

Williams, L. L., Surgeon. Leave of absence for seven days from September 19, 1910, amended to read three days from September 19, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 1, 1910:

Bailey, Edward, Lieutenant, Medical Reserve Corps. September 24th, relieved from duty at Fort George Wright, Washington; ordered to report in person to the Medical Superintendent, Army Transport Service at that place for duty, with station at Seattle, Washington, relieving First Lieutenant James E. Maloney, Medical Reserve Corps, from duty on the transport *Burnside*.

Barney, F. M., Lieutenant, Medical Reserve Corps. September 29th, relieved from duty at Fort Clark, Texas, and will proceed home. Lieutenant Barney is relieved from active duty in the Medical Reserve Corps, to take effect upon the expiration of leave of absence granted him this date, for one month and seven days.

Bastion, Joseph E., Lieutenant, Medical Corps. September 28th, granted thirty days' leave of absence.

Carswell, R. L., Captain, Medical Corps. September 29th, relieved from duty at the Army General Hospital, San Francisco, California, ordered to Manila, P. I., for assignment to duty, on the transport sailing from San Francisco, Cal., December 5, 1910.

Crosby, William D., Lieutenant Colonel, Medical Corps. September 24th, appointed a member of a board for the examination of medical officers for promotion.

Davis, A. O., Lieutenant, Medical Corps. September 27th, left Fort Oglethorpe, Georgia, with the 11th Cavalry on twenty-one days' practice march.

De Witt, Wallace, Major, Medical Corps. September 29th, relieved from duty at Fort Yellowstone, Wyoming, and ordered to Schofield Barracks, H. T., for duty.

Fidd, Peter C., Captain, Medical Corps. September 26th, left Fort Slocum, N. Y., with recruits en route to Fort McDowell, California.

Griffis, F. C., Lieutenant, Medical Reserve Corps. September 20th, left Fort D. A. Russell, Wyoming, with the 9th Cavalry on practice march.

Keefer, Frank R., Lieutenant Colonel, Medical Corps. Appointed one of the members of a board for the examination of medical officers for promotion.

Kierulff, H. Newton, Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, to take effect October 29, 1910, his services being no longer required.

La Garde, Louis A., Colonel, Medical Corps. Appointed one of the members of a board for the examination of medical officers for promotion.

Lamb, William P., Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, his services being no longer required.

McCord, Donald P., Lieutenant, Medical Reserve Corps. Granted three months' leave of absence about October 1, 1910.

McIntyre, Henry B., Captain, Medical Corps. Granted leave of absence from date of his relief from duty in San Francisco, California, up to and including October 25, 1910.

Maloney, James E., Lieutenant, Medical Reserve Corps. Upon being relieved from duty on the transport *Burnside*, will proceed to Fort George Wright, Washington, for duty.

Miltenberger, Val E., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Riley, Kansas, and ordered to Manila, P. I., for assignment to duty on transport sailing from San Francisco, Cal., December 5, 1910.

O'Connor, R. P., Major, Medical Corps. September 23d, granted five days' leave of absence.

Pyles, Will L., Captain, Medical Corps. Upon expiration of present leave of absence, ordered to Fort Mackenzie, Wyoming, for duty.

Roberts, Ernest F., Lieutenant, Medical Reserve Corps. Ordered to accompany Battery C, 1st Field Artillery, from Fort Sill, Oklahoma, to San Francisco, Cal.

Slater, Ernest F., Lieutenant, Medical Reserve Corps. Honorably discharged from the service of the United States, to take effect October 13, 1910, his services being no longer required.

Trinder, John H., Lieutenant, Medical Reserve Corps. Orders directing him to report on October 1, 1910, at the Army Medical School, Washington, D. C., for a course of instruction at that school, revoked.

Weed, Mark D., Lieutenant, Medical Corps. Ordered to proceed to West Point, N. Y., for temporary duty.

Wheate, J. M., Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Lincoln, N. D., to Fort Yellowstone, Wyoming, for temporary duty; left Fort Lincoln, N. D., en route to Fort Yellowstone, Wyoming, for temporary duty.

Willcox, Charles, Major, Medical Corps. Ordered to report at Washington, D. C., for examination for promotion on October 18, 1910.

The following named First Lieutenants, Medical Reserve Corps, will report October 1, 1910, to Colonel Louis A. La Garde, Medical Corps, president of the Army Medical School, for a course of instruction at that school: Robert H. Gantt, Henry P. Carter, Francis X. Strong, Harley J. Hallett.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 1, 1910:

Baker, M. W., Passed Assistant Surgeon. Detached from the *Connecticut* and ordered home to await orders.

Curtis, E. E., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 12, 1910.

Grow, E. J., Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the *Solace*.

Hayden, R., Passed Assistant Surgeon. Detached from the naval proving ground, Indian Head, Md., and ordered to duty at the naval hospital at Norfolk, Va.

Hermesch, H. R., Passed Assistant Surgeon. Detached from duty at Knoxville, Tenn., and ordered to the naval recruiting station, Minneapolis, Minn.

Lane, H. H., Assistant Surgeon. Detached from the naval station, Hawaii, and ordered to duty at the naval hospital, Canacao, P. I.

Lung, G. A., Surgeon. Detached from the navy yard, New York, N. Y., and ordered to duty on board the *Connecticut* as fleet surgeon of the Atlantic Fleet.

Lynch, J. J., Acting Assistant Surgeon. Resignation accepted, to take effect October 1, 1910.

McCormick, A. M., Surgeon. Detached from duty on board the *Connecticut* as fleet surgeon of the Atlantic Fleet and ordered to the Naval Academy.

Olson, G. M., Assistant Surgeon. Detached from the naval recruiting station, Minneapolis, Minn., and directed to await orders.

Rennie, W. H., Passed Assistant Surgeon. Ordered to duty at the naval hospital, Annapolis, Md.

Smith, H. W., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the *Connecticut*.

Steadman, W. G., Passed Assistant Surgeon. Detached from the naval recruiting station, Hartford, Conn., and ordered to the *Dixie*.

Straeten, R. J., Passed Assistant Surgeon. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the naval proving ground, Indian Head, Md.

Stuart, M. A., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from May 4, 1910.

Trible, G. B., Assistant Surgeon. Ordered to duty at the naval hospital, Norfolk, Va.

Wentworth, A. R., Medical Inspector. Detached from the Naval Academy and ordered to the navy yard, New York, N. Y.

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Births, Marriages, and Deaths.

Married.

Bryan—Gilbert.—In Ossian, Iowa, on Saturday, September 17th, Dr. Will Bryan and Miss Floy Gilbert.

Holland—Clark.—In Evanston, Wyoming, on Thursday, September 22d, Lieutenant Josiah H Holland, Medical Reserve Corps, United States Army, and Miss Margaret H. Clark.

Riordan—Kelly.—In Croton Falls, N. Y., on Thursday, September 29th, Dr. Thomas A. Riordan and Miss Mary A. Kelly.

Thearle—Mills.—In Waynesboro, Pennsylvania, on Monday, September 5th, Lieutenant William H. Thearle, Medical Corps, United States Army, and Miss Birdie Golden Mills.

Died.

Bevans.—In Grantsville, Maryland, on Sunday, September 25th, Dr. Henry Bevans, aged sixty-eight years.

Boyce.—In Troy, New York, on Friday, September 23d, Dr. Elias Bedell Boyce, aged seventy-two years.

Buist.—In Charleston, South Carolina, on Thursday, September 29th, Dr. J. Somers Buist.

Burkett.—In Dayton, Ohio, on Wednesday, September 21st, Dr. Edwin F. Burkett, aged forty-five years.

Bush.—In Montgomery, Alabama, on Saturday, September 24th, Dr. Charles F. Bush, aged thirty-two years.

Cook.—In Kenton, Ohio, on Friday, September 23d, Dr. Lewis Cook.

Coursen.—In Oak Ridge, New Jersey, on Sunday September 25th, Dr. Winfield S. Coursen, aged eighty-six years.

Dubar.—In East Orange, New Jersey, on Saturday, September 17th, Dr. Charles L. Dubar.

Eichler.—In Fayetteville, Ohio, on Tuesday, September 20th, Dr. J. P. Eichler, aged eighty-six years.

Erhard.—In College Point, New York, on Wednesday, September 28th, Dr. John Erhard, aged forty-eight years.

Fleming.—In Denver Colorado, on Saturday, September 24th, Dr. Cary K. Fleming, aged forty-seven years.

Gardner.—In New York, on Wednesday, September 28th, Dr. William Cowpe Gardner, aged fifty-five years.

Gilbert.—On the steamer *Lapland*, on Friday, September 30th, Dr. Samuel Dutton Gilbert, of New Haven, Connecticut, aged sixty-two years.

Gudger.—In New York, on Sunday, October 2d, Dr. Hubert B. Gudger, of Asheville, North Carolina, aged twenty-four years.

Holthausen.—In Tipton, Indiana, on Saturday, September 24th, Dr. William F. Holthausen, of Brooklyn, New York, aged thirty years.

Jarrell.—In Savannah, Georgia, on Tuesday, September 20th, Dr. Joseph Gilman Jarrell, aged forty-two years.

Johnston.—In Trenton, New Jersey, on Saturday, September 24th, Dr. Frank Johnston, aged fifty-five years.

Laberge.—In Beauharnois, Quebec, Canada, on Sunday, September 25th, Dr. Philemon Laberge.

Moore.—In Long Island City, New York, on Tuesday, September 20th, Dr. Henry Moore, aged ninety-six years.

Nelson.—In St. Louis, Missouri, on Tuesday, September 20th, Dr. Edwin M. Nelson, aged sixty-two years.

Selee.—In Melrose, Massachusetts, on Sunday, September 25th, Dr. Annie S. Selee, aged seventy-seven years.

Sibley.—In Terra Haute, Indiana, on Monday, September 26th, Dr. Leroy Sibley, aged thirty years.

Smith.—In New London, Connecticut, on Saturday, September 24th, Dr. Frederick W. Smith, aged sixty-nine years.

Spooner.—In Peru, Indiana, on Monday, September 26th, Dr. Jared Spooner.

Young.—In Hopkinsville, Kentucky, on Saturday, September 24th, Dr. James A. Young, aged sixty-four years.

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Original Communications.

THE MECHANICOBIOLOGICAL STANDPOINT IN MEDICAL PROBLEMS.

By Jonathan Wright, M. D.,
New York.

III.*

Some of the Problems of Surface Tension.

In previous papers I have several times alluded to the much cited analogy drawn between crystallization and living processes, an analogy first broached it is said by Maupertuis, more than 150 years ago, and repeatedly cited afresh by those making a synthetic study of physical and biological phenomena, by Schwann when he discovered the cell, by Herbert Spencer when engaged in the biological sections of his *Synthetic Philosophy*. More recently the discovery of the properties of the so called fluid crystals has allied this electrodynamic state of fluids closely, on the one hand with the crystalline state of solids, and, on the other, with the colloid state of living protoplasm.

Among those who have worked in this borderland of the animate and the inanimate is Professor O. Lehmann, who has recently published[1] a paper which interested me very much on the study of the differentiating power of cells in their reactions to different kinds of particles with which they come in contact in the tonsillar crypts. We see them there repelling bacterial protoplasm and absorbing inanimate dust. Lehmann says that when fluid crystals are allowed to grow in a solution which holds in suspension particles of a foreign substance, rust for instance, in their formation they only take up the foreign bodies when the solution in which they form is saturated both with the foreign bodies and with the materials out of which the crystals are formed. Otherwise they are repelled, so that when the crystals appear in a solution, dark with rust particles, they appear as clear round bodies in a dark background. This manifestly is an example of inorganic differentiation due to the exertion of repellent surface tension forces between the fluid crystal and the rust granule. It has been shown by Schaeffer[2] that the protozoon, *Stentor cœruleus*, acts in the same way when starch, sand, and debris are placed on it, while it quickly takes in and digests organisms, living or dead. On the other hand, the cell of the tonsillar crypt keeps out the living organism and lets in the inanimate dust. This sequence of observations must have a force, arranged as they are here, which each observer alone could not hope to exert in convincing a skeptical or indifferent audience that it is indeed the surface tension which accomplishes this act, so necessary for the survival of the unicellular organism, and of such great importance for the survival of the human organism. This concept of the selective permeability of cell membranes has been applied by Ostwald to the phenomenon of the so called semipermeable membranes, to which I shall have occasion to recur later, whereby it is evident that those surrounding muscle fibres, in answer to certain stimuli of the nerves, let in from the external environment ions which affect the contractility of the muscle in contraction or relaxation (Bethe). We see in this recent report of Lehmann on the behavior of liquid crystals somewhat of a departure, a variation, shall we say, from the behavior of rigid crystals in their formation; these latter frequently englobe foreign bodies.[3] Indeed, minute foreign bodies or even the crystals of other substances may form the nucleus around which crystal formation takes place. They act thus as a sort of determining agent in the so called spontaneous crystal formation.[4] We see the connection with electrodynamic forces when we recall the fact that rain drops in the clouds are often formed around the swirling dust particles; it is still more evident when we remember that it has been demonstrated that this drop formation in water vapor occurs around electrons shot off from a Crookes tube.[5]

As a matter of fact, the dynamics of the surface tension of liquids, as a problem of physics, had long been, in the scientific world, a subject of languid interest. For many years chemist and physicist alike have studied the forces developed on aggregates of complex molecules as well as on the surfaces of drops of water and oil. In the electrodynamics there revealed they had found explanations for many of the chemical reactions and many of the meteorological phenomena, and in these fields this knowledge has advanced civilization. When, however, the nature of colloids was revealed, especially in the later studies of Bredig[6] and Zsigmondy[7] and in its still later applications by Gengou[8] and Buxton,[9] when it was observed how their surface tensions governed the behavior of the minute particles in organic fluids, when the significance of adsorption phenomena was appreciated, a new zest was in-

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*Former papers of this series were published in this *Journal* of October 10 and November 7, 1908.

[1] *Physikalische Zeitschrift*, xi, January, 1910, p. 44.

[2] *Science*, March 12, 1910.

[3] *Les Etats physiques de la matière*, by Ch. Maurian, Paris, 1910.

[4] Marcelin. *Comptes rendus de l'Académie des sciences*, March 8, 1909. Ref. Maurain.

[5] *The Corpuscular Theory of Matter*, by J. J. Thomson, 1907.

[6] Bredig. *Anorganische Fermente*, Leipzig: Engelmann, 1901.

[7] Zsigmondy. *Zur Erkentnisse der Colloide*, 1905.

[8] Gengou. *Archives internationales de physiologie*, September and November, 1908.

[9] Buxton. *Journal of Medical Research*, February, 1909, et alidem.

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fused into the study of the physical phenomena of biological processes. In a word, since it has been recognized what an enormous and varied field exists in the microcosm of cells, in which such electrodynamic forces play the chief part, the literature of the subject which is springing up is already of great volume, and a feeling is growing that we are on the eve of momentous discoveries in the mysteries of infection and immunity, in the problems of cell division and of heredity.

Very numerous and very elaborate publications have appeared in physiology since the brochures of Bredig and of Zsigmondy on the ultramicroscopic appearances of the various metals in colloid solution, and a very large proportion of these have dealt with these phenomena which are noted in the inorganic and the organic colloids alike. This has done much to stem the tide which had set in toward vitalism as an explanation—or rather on the contrary as nonexplanatory of intra and inter cellular activities.

It is difficult for many of us who received our academic education a generation ago to master the formidable looking equations which demonstrate with mathematical accuracy just what relationship exists between electrodynamic forces of the inside and those of the outside of a globule of protoplasm—just how one globule repels or attracts another. As much because the paragraph avoids these formulary whirlpools as because it in some degree illustrates the nature of one of the physical problems which will confront the biologist of the future, better endowed with mathematical lore than some of us at present, I will translate one of the concluding pages of a recent publication[10] by Michaelis on the dynamics of surfaces, "an introduction to the study of biological surfaces." The chapter is entitled the Curve of Surfaces. Before entering upon this it may be interesting, at least desirable, to review some recent work upon intermolecular forces, which will serve in some degree to explain how they are intimately bound up with the surface forces and the "curve of the surface" of the molecular aggregates with which the biologist has to deal in studying the protoplasmic bodies, only the latter are enormously more complex than the inorganic bodies. I avail myself of the excellent résumé of Maurain[11] on the physical states of matter. A large number of attempts have been made to determine the radius of action of the intramolecular forces, which have long been recognized as entirely different in their nature from the inexplicable force of gravitation. The radius of molecular influence has been determined by various means, and while the results arrived at are not in exact accord the figures are of the same order of magnitude, or rather, are alike all but infinitesimal. Maurain refers to the attempt of Plateau to determine it by the simple device of measuring the pressure within bubbles of air enclosed in the thin walls of a mixture of soap, glycerin, and water. He seems to have satisfied himself that the radius of action between the molecules making up these excessively thin walls is less than 57 $\mu\mu$; that is, fifty-seven millionths of a millimetre, which approximates one seventy millionths of an inch. Apparently the action is in reality much less extended than even this inconceivable distance, varying with different molecules and molecular aggregates. These results and others somewhat resembling them have been attained by means of securing free layers of fluid in the air and measuring their thicknesses by various devices, but layers on other objects have been obtained considerably thinner than the figures mentioned are intended to define.

It is necessary to keep in mind that this radius of influence of the molecule beneath the surface extends from the molecule as a centre in all directions. It is clear therefore that at the surface some of the radii of the molecule must "stick up into the air," as it were. We must realize therefore that every substance has a surface energy dependent upon its own internal molecule energy, even if it has none derived from emanations from other substances. When, however, a coating of molecules of a thickness in excess of the radius of action of the subjacent molecules is layered on a substance, by electrolysis or by firing it on from a Crookes tube, for instance, we have then a dynamic condition dependent on the coating, even of the infinitesimal film alluded to, and not upon the subjacent mass.

It is quickly seen how all this affects us, when, in the science of immunology, we are confronted by dilutions of sera with another fluid, which has been attenuated to an inconceivable degree, causing reactions which tell at once for the life or death of the animal into which the mixture or the dilution is injected. A tenth of a cubic millimetre or less, we can thus understand is quite able to give another surface reaction to the globules concerned when injected into the circulation of a rabbit. The part the lipoids play in the activities of this kind which are being revealed is very significant.

Those who have seen a dry flake of bran or a dry leaf gyrate when it falls on water, those in the laboratory who see the celloidin sections do the same when they are transferred from a fluid of one surface tension to that of another, are able to realize the efficiency of the forces at play. It has been shown by Lord Rayleigh that these are due to the change in the surface tension, which ensues rapidly as the fluid soaks into the interstices of the dry surface or mingles with another fluid of a different index. By using camphor flakes on water the same gyrations are seen. Lord Rayleigh bethought himself of preventing them by floating over the water the thinnest possible coating of oil. The results varied, but layers of oil 6 $\mu\mu$ in thickness were sufficient to prevent this reaction of camphor and water. With thinner layers than this, down to 1 or 2 $\mu\mu$, the surface tension demonstrated began to be influenced by the action of the water beneath. The quantities of oil just sufficient to coat the surface of Lord Rayleigh's tub of water with such thicknesses are naturally exceedingly minute. Other calculations, perhaps more accurate, but not incidentally of such a significant nature to us in medical science, by means of optical, electrical, magnetic, and thermal conductivity, have all betrayed a correspondence in the measurement of the radius of molecular action well within the limits of experimental error.

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[10] Dynamik der Oberflächen. *Eine Einführung in biologische Oberflächenstudien*, von Professor Dr. med. Leonhard Michaelis, Dresden, 1909.

[11] *Loc. cit.*

We may now turn with a better chance of understanding the kind of equilibrium which Michaelis refers to in his chapter on the curve of surfaces.

> Our views, thus far collectively presented, have taken it for granted that the surface tension of any material is independent of the form of the surface. This assumption is usually well founded, because the surface tension depends upon the efficiency of the forces which exist between the molecules, and the sphere of influence of molecular attraction is exceedingly small. If, therefore, the curve of a surface is not too great, those points of the surface which have an especial influence upon one another are very close together in one plane. But, just as soon as the curve of the surface is thought of as extreme in degree, this assumption loses its force. From various points of view it has been shown that with increase of curvature of the surface, the index of the surface tension must increase; very small drops have therefore a higher surface tension than belongs to their structure under usual conditions. (With extremely small drops the tension sinks again, that is namely, when the radius of the drop becomes smaller than the sphere of its molecular attraction.) Such very markedly curved surfaces are found, especially, when a phase is divided into a very finely granular condition in a fluid medium, a system which Wo. Oswald has spoken of as a "dispersoid," and which in general corresponds with the so called colloid solutions; that is, when the suspended bits have no tendency to sedimentation. Let us suppose that the surfaces of the suspended little drops in any given condition have a tension of any certain positive degree. Under the influence of the tension, there must occur a diminution of the total surface and thereby a melting together and a coarser condition of the drops. In this way the surface tension of the separate drops becomes smaller, and hence, so long as the difference of potential remains the same, the total tension also becomes smaller. So that it may happen that with a certain, quite definite size of drop, the total tension may become entirely nil. Upon this there is no further cause present for a further flowing together of the drops; for, if the flowing together should continue, the total tension would become negative, and the drops would again divide until the tension was again nil.

He goes on to say that this pulsating back and forth in the size of drops, varying with the surface tension as affected by the electrolytes falling on them, is a condition present in the colloids of the living body and we thereby gain an idea of the delicacy of the mechanism which works out the vital tasks. Of course this example of change in magnitude is only one exemplification of processes too manifold and complex to follow very far as yet. We are compelled, by the limitations of our powers of observation and analysis to abandon this application of the laws of infinitesimals in biology to the physicists. Yet a sort of vague analogy tempts me to introduce here some notice of an attempt in embryology to reconcile the mysticism of Driesch with mechanicobiological doctrine.

In the early years of the decade just drawing to a close there existed in biological literature one of the many examples of the intolerance with which orthodoxy treats heterodoxy. I refer to the hostility and contempt which greeted the rise of neovitalism.[12] In an astonishing manner, quite unaccountable to their critics, the extreme Weismannian group, the so called neo-Darwinians, thus greeted the advent of mysticism in biological science. Resting their own superstructure on a groundwork of a mystic attribute ascribed to a certain kind of matter, endowing the germ plasm with inviolability, they derided the application of any further mysticism to vital processes. As the sappers and miners, the busy workers in biological science undermined more and more their own position, as it became necessary to admit the germ plasm was indeed subject to its environment, even to some extent through the soma, the orthodox biologist has apparently become more tolerant of other points of view, and Driesch, the high priest of neovitalism has been invited to deliver the Gifford Lectures[13] in the orthodox halls of Aberdeen University. He has explained how the mysterious "entelechy" dwells in all living things, is in them but not of them. Nay, this seed has fallen on fertile ground, for here is an Englishman, Richard Assheton, of Trinity College, Cambridge, who has published a paper[14] with the title The Geometrical Relation of the Nuclei in an Invaginating Gastrula, Considered in Connection with Cell Rhythm and Driesch's Conception of Entelechy, in which he identifies the entelechy with the force which draws the cells inward, invaginating them into a vacuole, from the walls of which the internal organs are formed. My notes say briefly that this formation is due primarily to the attraction which each cell has for its neighbor, plus the force of growth. The resultant parallelogram of forces constitutes at a certain point of the ovoid blastula an invaginating pull which drags on the convex surface at this point inward. Well recognized physical laws, which we are identifying with those of surface tension, govern this process, but the primordial attracting force of one cell centre upon the other, whether structurally represented in the nucleus or the centrosome, the author identifies with the entelechy of Driesch as a force aside from any with which we are familiar in nonliving matter. I presume, until we become more familiar with this manifestation of force, there is no particular objection to calling it an entelechy, if we make it very apparent, as the author does not, that there is every reason to expect that a further lifting of the veil of our ignorance will in the future, as in the past, demonstrate that this is a manifestation of the same force as that which we have just been studying on the surface of molecules and molecular aggregates. As I have insisted elsewhere, it is probably a molecular disturbance of this force which gives the "wobble" to the inheritance of cells which eventuates in the lawless growth of cancer or some less deadly cell "sport."[15]

So far, then, this segregation of a special manifestation of cosmic energy is a helpful process of analysis in the study of the unknown, but the benefit which has been derived from it in the heart of biological orthodoxy teaches us an ever needed lesson: "Examine all things, reject the bad," said Pestalozzi, but let us never be too cocksure any of them are "bad."

The study of the molecular forces has interested

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[12] The unassailable germ plasm of Weismann varying in all directions, the engrammes of Semon writing their experiences in some mysterious manner on it, the entelechy of Driesch, resemble one another exactly only in one particular; they are inexplicable.

[13] *The Science and Philosophy of the Organism.* The Gifford Lectures delivered before the University of Aberdeen in the year 1908 by Hans Driesch, Ph.D., ii, 1908.

[14] *Archiv für Entwickelung's Mechanik der Organismen*, xcii, March 15, 1910.

[15] The Affiliations of Cancer with the Fundamental Theories of Heredity. *New York Medical Journal*, April 3, 1909.

Lillie in working out their application to the phenomena as widely separated in the thought of a former decade of scientific activity as the field of muscular contractility[16] and that of sexual fecundation. "The action of electrolytes in altering the permeability of the plasma membranes, and the relation of these changes of permeability to the irritability and to the energy reproduction of the tissue (stimulation, inhibition, anæsthetization)" are discussed by him, and to some aspects of the subject I have referred in a recent paper on the smooth muscle cell.[17] It can scarcely be doubted that "the characteristic electrical surface polarization, on which the possibility of stimulation depends," is influenced by the ions of various substances "and the energy of muscular contraction is transformed surface energy." Elsewhere[18] he draws attention to the fact that a "connection between contractile activity and coagulative changes in the colloids of the contractile tissues is thus indicated (i. e., by the simultaneity of their occurrence in the establishment of pulsation in fecundation). Presumably the contraction phase of the beat is due to a coalescence (incipient coagulation) of colloid particles; this change is reversed during the relaxation phase." This coagulative process has been described by himself and others as set up by the entrance of the spermatozoon with its electrodynamic charges into the egg. McClendon[19] has shown that the permeability of the egg to ions is greater after fertilization. Lyon and Shackell,[20] which is more interesting to me, have shown that this modification of the electrodynamic state of the protoplasm of the egg renders it more susceptible to the penetration,—increases its adsorptive power for more material things, *intra vitam* stains, for instance, which are inert matter in a state of minute division.

Lillie, very aptly to us in this connection, remarks: "Perhaps the most distinctive feature of colloid systems is their large potential surface energy." As we have seen the physicist altering the energy on glass surfaces by plastering them with electrolyzed silver salts, or by pelting on to them molecules of platinum from the Crookes tube, we can allow our imagination to fancy the molecules gathering about the histomere of a striped muscle or on the periphery of a surface epithelial cell and thus modifying the action and interaction of neighboring protoplasmic entities.

The alteration in the surface energy of the chromosome in karyokinesis Pentemalli professes[21] to have attained experimentally, with an ingenious application of the electric current which caused a deviation of their paths of movement. "The chromatic elements of the karyokinetic figure possess a greater negative charge than the colloidal parts of the other cell structures. This electric charge is low or nil in the chromatic parts of the *resting* nucleus, . . . but as the karyokinetic process advances the electrical charge of the chromatic elements increases, the tendency to movement being increased. . . . The establishing of this observation lends support to the electrical theory of karyokinesis." This is only establishing experimentally and confirming the correctness of the interpretation of an observation made a number of years ago by R. Hertwig and enlarged by various studies of his pupils: "Every cell division assumes a previous condition of tension between cytoplasm and nucleus, that is, a disturbance of the equilibrium existing between nuclear mass and plasma mass in favor of the latter,—a disturbance which is again equalized by division." This idea has had its very recent elaboration in a paper by Emil Godlewski.[22] Herlitzka in his contribution to the physiology of regeneration says:[23] "I have defined a stimulus as a change of the condition of the colloids, which is associated with a change of their electric charge, and I have attempted to show further that the stimulus of the taste buds (of the tongue), that is to say the condition reached by the sensation of taste, is to be traced back to the same cause as the stimulus of nerves and muscles." He believes that this applies as well to the cell divisions of regeneration to which I have referred in connection with the work of others as above. It would scarcely be possible in a few lines of quotation to illustrate better how completely this electrodynamic conception of vital processes has taken possession of all fields of biological thought.

In the course of his experimentation with variously applied wounds of living tissue, Herlitzka came to the conclusion that in the process of regeneration the cells which take the effective part are not those immediately traversed by or in contact with the wound, for in wounds through the epithelium, while the superficial layers give forth the more or less unorganized corneous material of the surface, the deeper cells in the Malpighian layers furnish the substitutes for those which have perished. "Such a separation of the proliferating cells from the wounded surface makes it all the more probable that we have here to do with electric activities since these seem best adapted to connect structures situated at a distance from one another, and in this way action at a distance is explicable." I am interested in developing the author's ideas a little further since incidentally they have an affiliation with some previous observations of my own on the epithelial detritus in the tonsillar crypts. He repeated the experiments of Du Bois-Reymond and others who had shown that when we immerse two fingers in water, one with a cut or a solution of the epithelial continuity and one unwounded, the cut finger reacts in a markedly positive manner to an electric current passing from one to the other, but the passage of the electric current no longer takes place when both fingers are wounded.[24] The current, as measured, was of considerable strength, and the differentiation persists for a considerable time after death. He thinks there is reason to believe that the horny layer is a lifeless part incapable of generating a current. However this may be,

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[16] Relation of Ions to Contractile Processes: The Influence of Various Electrolytes in Restoring to Muscular Contractility Its Loss in Solutions of Sugar and Magnesium Chloride. By Ralph S. Lillie, *American Journal of Physiology*, xxv, p. 459.

[17] *New York Medical Journal*, April 30, 1910.

[18] *American Journal of Physiology*, xvi, p. 129, 1906. See also his note with Greely's, *Biological Bulletin*, 1904, No. 7, p. 1.

[19] *Science*, July 22, 1910.

[20] *Science*, August 19, 1910.

[21] Influenza della corrente elettrica sulla dinamica del processo cariocinetico. *Archiv für Entwickelungs-Mechanik der Organismen*, xxviii, November, 1909.

[22] *Archiv für Entwickelungs-Mechanik der Organismen*, xxx, 1910.

[23] Ein Beitrag zur Physiologie der Regeneration. *Ibidem*, Zweiter Theil.

[24] *Psyche und Leben*, Wiesbaden, 1908.

Bechterew has shown the existence of an electrostatic charge on the connective tissue cells which is transmitted by nerve paths to the brain and is measurable there quite apart from any such charge on the muscle cells.[25]

I refer again to Bechterew's work having previously quoted him to the same effect elsewhere because of the remark of Herlitzka in regard to the adynamic or lifeless condition of the corneous layer of the surface epithelium. Now, I had several years ago noted[26] the fact that in the tonsillar crypt, where we have the scurfy corneous layer detached from the living cells and a lingering of it *in situ,* the *keratosis* of laryngological literature, the bacteria penetrate it readily in all parts but do not enter that which is firmly incorporated with the living epithelium of the cryptal wall. I urge that we have here again a manifestation of the differentiation of surface tension.

As to the origin of this electric manifestation of force, it seems almost certain that it is bound up with the phenomenon of osmosis both as cause and effect, and this will serve as an introduction to a recent paper by Fischer to which I will shortly refer. His work, as practically all of that with which we are here concerned, has its roots of origin in the domain of physics. "As long ago as 1894, Traube[27] became convinced that the direction and velocity of the osmotic current is due to a difference of surface tension between the two fluids on either side of a colloid or semipermeable membrane." His theoretical ideas were subsequently strengthened and clarified by an acquaintance with the classical and epoch making mathematical work of Gibbs, who seems originally to have made the statement from mathematical data, "that the osmotic pressure and the surface tension are both of them functions of the temperature and the chemical potentials of the chemical substances involved." From these fundamental principles of Gibbs and Traube, Fischer has derived his ideas and the meiostagmin reaction of Ascoli avowedly rests upon them.

It is the interchange of material through cell membranes, watery material, albuminous fluids, colloid solutions, living colloid bodies with their own marked surface energy—it is the osmosis between cells in the cryptal tonsillar phenomena of infection, which are bound up with the streaming of kations and anions, detected by the electrometer and which interests us in physiology and pathology. It is the alteration which these ions make in the tensile state of the surface of the inter and intra cellular colloids, which determines what shall go in and what shall stay out in the process of surface infection and surface immunity. Yet it is very evident from practical observation that there is a margin of safety within which, as Meltzer[28] has so clearly indicated, the organism as a whole is able to preserve an equilibrium compatible with health. Man can only make an efficient undeviating machine. Nature has made an adaptable one. That is the difference between mechanics and biological mechanism.

In Fischer's work on the mechanism of œdema we find the same principles at work, so fundamental and so far reaching are they, as we have seen. At first Fischer's work found little support and attracted little attention[29] in this country, but Fleischler and Loeb[30] and Pauli and Handovsky[31] show experimentally that the exit of serum from the vessels is not due to heightened blood pressure, but to the modification of the colloids of the cells by certain ions. The latter authors, after referring to Fischer's previous work, conclude: "Through experiments on albuminous bodies and organs there has been recognized the importance of the conditions of the colloids, as modified by the electrolytes, in their influence upon the water contents of the tissues." So that there seems reason to believe that there is a serious error in the commonly accepted view that the œdema of a part, that is the transudation of watery fluid from the bloodvessels, is due in some way to obstruction and to the pressure of the heart beats from behind. This, I think, has been definitely disproved by Fischer and others. Fischer has taken the important step forward by demonstrating that it is a colloid chemical phenomenon, that it is due to the affinity of the external protoplasm for the water within the vessels. This "affinity" is a pathological condition set up by inflammation or other pathological states, by virtue of which certain ions are loaded on or taken off the cells external to the vessels, which thus constitute the changed condition of the surface tension. This change in the surface tension of the parts leads to œdema. This change occurs regularly after death, so that animal tissues after death if put in water for a time absorb it and add to their weight. Either post mortem under such conditions or *intra vitam* in excessive inflammation, further changes finally ensue which again alter the index of surface tension; decomposition in the one case, gangrene in the other, take place, and the protoplasm reverts to an inorganic condition (if we may so call it) whereby this power of absorption or adsorption for water no longer obtains; the part dries up or shrinks to smaller dimensions.

There is no doubt that Fischer is quite justified in asserting that his views, as he has developed them in the course of his account of experimental work, are in very satisfactory accord not only with biological appearances which conform to osmotic laws as established outside of the living body, but they are especially adapted to explain those apparent exceptions to the laws of osmotic pressure in living tissue, for instance, in regard to the red blood cells, as pointed out by Moore and Roaf.[32] These are some of the phenomena to which the Vitalists have pointed as instances of vital processes governed by some principle inherent in "life" and not found in lifeless matter. I have referred above to another application of Driesch's convenient entelechy.

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[25] I may remark that in the recent work of Bethe (*Scientia,* viii, anno iv (1910), numero xv, 3) he refers to the observations of DuBois-Reymond and the later ones of Hermann as containing similar observations on muscle fibres.

[26] *New York Medical Journal,* January 6, 1906.

[27] For a fuller account of the principles involved see a recent contribution to *Science,* August 26, 1910, by F. H. Garrison, from which I have made some quotations in the text.

[28] *Science,* March 29, 1907.

[29] Martin H. Fischer. It was in Ostwald's *Chemische Beihefte,* I, 3 to 5, February 15, 1910, I first saw Fischer's publication, with a footnote of recommendation by Ostwald to clinical men to test the accuracy of the experimental results attained. It seemed remarkable that no journal could be found in this country, as the author complains, to publish this praiseworthy product of the work of the laboratory of an American university, but most recently I perceive that his essay has gained the Hatfield prize and has been published in *Transactions of the College of Physicians of Philadelphia,* 1910.

[30] *Journal of Experimental Medicine,* ii, No. 5, 1910.

[31] *Biochemische Zeitschrift,* xviii, p. 340, 1909.

[32] *Biochemical Journal,* January 22, 1908.

As to the agents or substances, identified as favoring or inhibiting the occurrence of œdema of the tissues, they may be conveniently inferred from the passage: "We need not then be surprised if such materials as urea, glycerin, dextrose, cane sugar, etc., are not able to prevent the tissues from swelling in the manner that salts do, and that of the different salts, in equal concentration, one works stronger than the other." On living tissue he has experimented with encouraging results with solutions of the citrate of sodium (four to five per cent.). By analyses of the fluids concerned, he also adduced evidence for the belief that the formation of acids (lactic acid?) is conducive to the production of œdema, a conclusion which receives some support from the observations which have gone to show that the formation of lactic acid in the histomeres of striated muscle is coincident with the determination of water to the part.[33]

I hesitate somewhat to refer to various criticisms which of late have arisen as to the justification Ehrlich has had for giving a chemical interpretation to the phenomena of immunity by his famous side chain theory. While there are perhaps grounds for criticising the analogy he has drawn between the processes of repair and his theory of the formation in the blood of free bodies in excess of the needs of the moment,[34] it will hardly be considered essential, in the borderland of science occupied by immunology, to insist on a differentiation between things chemical and things physical, though doubtless it will prove more convenient in the future to approach many of the problems from the territories of the physicist. Recent work, I think, has fully justified the growing suspicion that it is the electric charge on the lipoid constituent of corpuscles and fluids, and not the other chemical constituents of the protoplasm, which is chiefly responsible for the serum reactions, so puzzling, especially at present, in the study of the syphilitic infection. A very good résumé of the relationship which has been revealed between the reactions of immunity and colloid phenomena may be found in a recent paper by Zangger.[35]

I may be pardoned for referring again to the differentiation in the behavior of living protoplasm to other living protoplasm and its behavior to inert matter or dust, since that is the phenomenon which, as it is observed in the tonsillar crypt, first excited my own curiosity. In the account of a recent[36] discussion in the Society for Microbiology in Vienna on the opsonins, Grüber intimated that their power, closely related to that of the alexins or complements, was probably due to something added to the latter, salts, perhaps, which when deposited from the active serum upon the bodies of bacteria change their surface tension in relation to that of the phagocytes, a suggestion which I have noted as occurring elsewhere in such discussions. In the work of Rosenthal, which he carried out with Saito, experiments were made upon the influence of normal serum in opsonizing bits of carbon so that they are more readily absorbed by the phagocytes. I trust the reader will bear in mind the physical experiments I have referred to, whereby thin layers were ascertained by means of testing the changed surface tension, to have been deposited on glass, on water, etc., in the experiments of Lord Rayleigh and others, for Rosenthal and Saito remarked: "One of the chief conclusions arrived at in these experiments is, therefore, that there is a radical difference in the opsonification of cocci and of carbon by fresh serum." Let the reader remember the consideration, necessary to keep in view, of the radius of molecular action at the surface of inert bodies acted upon, and that it required layers of various thicknesses to get beyond the spheres of action of the underlying substance, in the experiments of the physicists. In a very attractively written communication Sawtchenko[37] deals with the same subject, and he very naturally, it seems to me, remarks, that in making carbon or carmin grains more susceptible to phagocytosis it is difficult chemically to imagine that any amboceptor should have any effect through the creation of a receptor, though the addition of complement or alexin of the serum to the leucocytes, when brought in contact with them, does increase their phagocytosis two or three fold. His inference is "that there exist cases of phagocytosis which one cannot explain by the chemical sensibility of the leucocytes." Such action he regards as a purely physical process, affected by changes of temperature and plainly visible to the eye. It comes about by "creating conditions, in which the correlation of the superficial tensions of the leucocyte and of its object, are such that they determine their attraction and, finally, their contact," and the subsequent engulfing of the object must be accompanied by a modification of the superficial layer in the sense of the relaxation of its resistance.

It may be well here to pause for a moment and again turn to the recent paper of Bethe,[38] known for his classical work on the tonus of muscular and other connective tissues, who, in a résumé of the newer ideas in regard to bioelectric currents, quotes some work of Höber in regard to the permeability of the sheaths of the muscles to ions of salts which influence the static charge on the fibres. From his experiments he believed it was due to the way in which the external anions and kations riddled (*aufgelockert*) or thickened the membrane. Sawtchenko pointed to evidence that this is brought about, in the case of the phagocytes, by the complement, which "does not work in the sense of a phagocytosis proportional to the quantity which one has used of it."[39]

I may here interject the remark that all those, who have followed the course of recent physiological investigation, must realize that the common conception of a membrane, as applied to the limiting layer between cell body and nucleus or between cell body and the extracellular lymph, has been a source of embarrassment. Since we have realized that the cell is a fluid, a colloid fluid, and not a solid in any of its essential parts, an attempt has been made to regard these layers, not in this material light, but in a dynamic light, as layers without differing from structures within only in possessing another index of potential. Bethe (*loc. citat.*) has elaborated this conception, more adaptable to vital processes as we now conceive them. He looks upon the membrane of the muscle cell, for instance, as another phase of the same protoplasmic substance within. Just as cavities in ice may hold water in another phase than the crystalline, and may separate water holding different electrolytes, so the muscle fibre sheath may separate two different phases of protoplasm; the alternate striations are different phases of a dynamic manifestation. The alteration in these phases is brought about by the impingement of electrolytes (conveyed by nerve currents), and we have an interchange of ions which is manifested by the functioning, the contraction or the relaxation, of the muscle fibre. Thus the phase in the protoplasm is changed by electrodynamic influence, as the ice can be changed by thermal influences.

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[33] I have not noted that Fischer manifests an acquaintance with this line of investigation.

[34] See the criticism of Bang and Fursmann. *Münchener medizinische Wochenschrift*, 1910, Nos. 35 and 36.

[35] *Zeitschrift für Immunitätsforschung*, I Th., i, hft. 2, p. 193.

[36] *Centralblatt für Bakteriologie, Iste Abtheilung, Referate*, Beilage zu xliv, June, 1909.

[37] *Archives des sciences biologiques publiées par l'Institut impérial de médecine à St. Petersburg*, xv, 2, 1910.

[38] *Scientia*, viii, anno iv, 1910.

[39] I regret I have not space to refer to the curious meiostagmin reaction as reported by Ascoli and others in recent numbers, pp. 82, 403, 1122, 1170, 1910, of the *Münchener medizinische Wochenschrift*, where the surface tension of the liquid seemed more markedly affected by dilute solutions of the antigen than by the more concentrated.

From the investigations of Grüber and of Sawtchenko, to whom I have referred, and from those of many others who have made like contributions to biological literature, we may conclude, then, that it has been fairly well established that a phagocyte flows around a bacterium or a carmin granule as a drop of water spreads freely over a wet surface, while both refuse to do so if the bacterium or the glass surface have not the proper surface tension. Just why a phagocyte should work at a distance and attract a bit of carbon or a bit of bacterial protoplasm is not so apparent, if indeed it is a fact that it does so. Nor does it seem so easily demonstrated that the processes internal to the cell membrane are to be conceived in the same simple fashion, though Prowazek,[40] as a result of experimental observations, came to the conclusion that not only is there on the surface of the cell of the protozoon a specific surface tension, but "that doubt is no longer permissible that also, within the cell, there must be a so called 'morphogenic structure tension' in which the cell lipoids are materially concerned." From noting the effects of reagents on this internal tension, he believes cell death arises from physical rather than from chemical causes—when the internal cell tension is broken down life is destroyed. Age is the accumulation within the cell of unsaturated fatty acids according to Zangger, and according to Bredig the colloids grow old because of the presence of electrolytes causing coagulation or hysteresis. Lillie, in remarks incidental to his own problem of contractile processes,[41] believes that "in general, antitoxic action seems due to an approximate equalization of the opposite actions of anion and cation."

In all this there can scarcely be a doubt we are drawing away from the biochemical concepts of Ehrlich.

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[40] *Biologisches Zentralblatt*, xxix, No. 9, 1909.
[41] *American Journal of Physiology*, No. 17, 1905-6.

A SERIES OF STUDIES OF NERVOUS AFFECTIONS IN RELATION TO THE ADJUSTMENTS OF THE EYES.

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FIRST STUDY.

A Case of "Incurable" Chorea.

It is my purpose to present a short series of studies of nervous affections in their relations to the adjustments of the eyes, the studies being based each upon a single case of sufficient importance, observed with reasonable care, and sufficiently well defined in its character to afford opportunity for observing not only the phenomena but the course of treatment and the results of such treatment. Such a series of studies would appear to me of more value than conclusions derived from a number of isolated and, perhaps, not fully correlated facts and surely of more value than attempts to theorize from principles which might or might not apply to the cases.

I have chosen for my first study a case from a group which the experience of the profession has relegated to the class of incurables, a class in which the prognosis is said to be "absolutely hopeless." I shall take up the study of a case of

CHRONIC PROGRESSIVE CHOREA.

There is a considerable variety in the forms taken by the affection known as chorea. There is, first, the form which attacks a class of school children, generally somewhat anæmic and known as "nervous" children who begin to manifest, usually during school hours, a tendency to aimless movements, convulsive twitchings, and perhaps incoherent vocal ejaculations. These purposeless movements become more and more intense, commencing, perhaps, with convulsive winkings and extending gradually to jerkings of arms, legs, and even the whole body. At this stage the child is usually, by medical advice, removed from school, tonics are administered, and, in the majority of cases, improvement takes place after a few weeks. The various forms of treatment, each of which is, by the physician directing it, supposed to be a sure cure, indicate that the one element common to all the forms, the removal from school, is, after all, the essential one.

There are, frequently, associated with these milder cases, complications of a more or less serious character such as rheumatism, mental disturbances, and other affections which need not here detain us.

But there occur cases of a somewhat different type either as sequelæ of the type already mentioned or as original forms in which certain movements which are ordinarily performed become exaggerated in force and in frequency and which during many years, perhaps a lifetime, may cause annoyance and mark the individual as one in whom an unpleasant habit has become so fixed as to constitute a part of his or her individuality. We meet with these persons on street cars, in stages, or at other public places so frequently that they are quite familiar figures. One of these keeps up an incessant or a violent blinking of the eyelids, another a bobbing of the head, a third a jerking of a shoulder, while with others the twitchings or jerkings may assume a variety of forms.

Passing these and some other types we come to a more severe form which does not yield to medical treatment, characterized by more or less violent and general convulsive movements often accompanied with grimaces, ejaculations, and bodily contortions, the type known as "chronic progressive chorea."

I have chosen this form for our study because, first, it has been and is regarded by authorities in general as incurable, and, second, it seems to me both from a theoretical point of view and from practical experience to include the principles underlying the milder and more hopeful types.

Chorea is regarded by several modern writers as an affection due to the presence of an infectious toxine. The nature of this toxine, to be sure, is not known, nor, if I may assume to judge from the evidences, are there any symptoms which can legitimately be attributed to toxines. The automatic system of logic which positively attributes an affection whose nature does not happen to be understood, necessarily to toxines is convenient and worry saving but has the disadvantage that it is wanting in practical value.

A good many years ago, when I knew less of chorea than I ought to know at present, and when, notwithstanding a thorough familiarity with the teachings of Donders, Graefe, and others, I knew really little of the adjustments of the eyes, I announced the proposition that chorea was due to faulty eye adjustments and principally to hypermetropia. Based upon examinations of a not very large number of cases and upon a limited knowledge of the assigned cause it was a bold statement which, had a larger experience and a deeper insight into the assumed causes led me to see was unfounded, I should readily have abandoned. As a matter of fact, while, were I now writing the proposition, I would word it somewhat differently, its essential elements have been fully sustained after years of diligent and careful investigation.

There are many most important elements in the adjustments of the eyes which only continuous and laborious observation, largely arising from my own errors and failures, have served to reveal. With the advantage of an acquaintance with these elements, then unknown but now regarded as most important, I think it not assuming too much to say that I am better prepared to defend the position taken many years ago than I could have been at that time or for many years after.

If I may be pardoned for this somewhat discursive introduction I will come directly to the study of our single case.

CASE: On July 16, 1907, while engaged in my consulting room, I heard, coming from the reception room, what appeared to be a good deal of confusion and I stepped into that room to learn what was the matter. I saw a boy sitting beside a woman who proved to be his mother, performing about as many preposterous antics as could well be crowded into the same amount of space and time. His face was distorted, his mouth most of the time widely opened, his feet stamping the floor and his arms flying wildly. With both hands he would strike his head as it dodged to get between his knees, then as the head was raised the hands would clap together. With these and other wild and grotesque movements there were mingled vocal ejaculations which appeared to be a sort of a cross between a grunt and a bark and a hissing forced drawing in of the breath. After watching the apparition for a moment I requested the permission of the other occupants of the reception room to take the boy at once into the consulting room.

The following history I condense from conversations with the mother on several days and from my own observation.

The boy, A., was sixteen years of age, was of about the usual height for his age but was quite thin and pale. He was three years old before he walked, but when he was only two years of age he began to manifest the twitchings of chorea to a moderate extent. When he began to walk, steel braces were adjusted to his knees and ankles, but in spite of these aids he was accustomed to stumble and fall continually. At the age of six the convulsive movements were very bad and his head tipped from side to side. As he grew older and somewhat stronger there were times when he was sufficiently quiet to attend school for a week or for two or three weeks at a time. His teachers, knowing his condition, permitted him to go and come as he pleased. He was an apt pupil and seemed to keep well along though what he learned seemed to be more by the ear than by the eye. At the age of nine, by the advice of physicians, he was removed from school and since that age he had never attended any school. He had, at times, a habit of looking "cross eyed" but was scolded by his mother for it and after a time the habit was discontinued.

In the meantime, during all these years, he had been under medical attendance until quite recently. When he was about seven years old he was in a hospital for several weeks, a part of his treatment being the removal of his tonsils. Then he was taken to another hospital where he was attended for a "good while," the mother could not tell how long.

About four years previous to this conversation he had been for eight months continuously in attendance at a well known hospital as an out patient. Then it was decided to place him in the hospital for more careful observation. The blood was examined, drugs administered, and he was placed in bed where he was required to remain, not even rising for his meals. During a part of this rest treatment he was placed upon an exclusive milk diet. He remained at the hospital and in bed two months; during the last two or three days of his stay only he was permitted to leave his bed. He was secluded from the other patients and his room was darkened. He was at length discharged "improved," but the mother states that in less than a week the choreic movements were fully as violent if not more violent than before. Later he was under other medical care. In fact it would appear that with exceptions of a few weeks or a few months at a time he had been under the observation of skilful and well known physicians all his life.

He could not run or walk fast without getting pain in left side, over the heart. In going from the street to his mother's apartment on the third floor he was obliged to stop a number of times to take breath.

For a number of years he had a violent spasmodic cough. If he was taken on a street car or other public conveyance all the children were rushed out in fear of whooping cough. He did not now cough much. He was a sleep walker and had to be watched with great care

His ejaculations as well as many of the violent movements continued through the night, greatly to the annoyance of his father and two brothers who were laboring people and whose rest was habitually disturbed by the incessant repetition of the sounds. His height was five feet five and one half inches, and his weight 101½ pounds.

He had not had rheumatism. The heart's action was rapid and irregular but there was no evidence of organic lesion. There was no paralysis; digestion was good, and appetite was normal. Reflexes were normal.

In respect to his heredity I could learn little except that the mother appeared to be a robust hard working woman and she said that her husband and two other sons were in all respects well.

To return to the nervous condition of the boy. Of the stamping of the heels against the floor, the clapping of the hands, the striking the head in its bobbing between the knees and up again, of the ejaculatory sounds, I have already spoken. It would be difficult to exaggerate these phenomena. As he walked he stopped once in a few steps and gave a jerk of the shoulders backward and of the abdomen forward making at the same time one of his characteristic sounds. His face was in perpetual motion and his body was never still. Occasionally as he walked he stopped for a general convulsive attack of a much more violent character than that just mentioned.

Two attempts were made to obtain a photograph, but as in the operating room a time exposure was required, both attempts proved failures.

Thus we have a case of violent chorea which has been continuous for fourteen years, long enough, we may suppose, to be regarded as chronic, and one to the relief of which the best efforts of a number of able and distinguished physicians have been directed absolutely without avail. Indeed the malady has steadily advanced in severity under all this skillful care. Such a case may therefore be regarded as a chronic progressive one and classed with the incurables.

Let us now turn to the conditions found in respect to the adjustment of the eyes. The ophthalmoscope showed no lesion. Without repeating the details of several examinations made on as many days, the other conditions might be summed up as follows: Vision of each eye 6/6, right without glass, left with cyl.+1.25 axis 90°. Hyperphoria=0; esophoria=16°, deviation in exclusion corresponding to the esophoria shown by the phorometer. Rotations were all free and normal but the rotation upward of 42° was in excess of the most favorable rotation in that direction. *Declinations, right + 1°, left + 6°.* The boy could see single, but images were confused when both eyes were open and the interposition of a faintly colored glass before either eye induced diplopia.

Treatment. Here too we may condense the daily records to a general statement. The correction of the *declinations* was the aim of all the efforts to correct the adjustments. No treatment was instituted directly against the esophoria, for in case the declinations could be corrected there was no reasonable doubt that the esophoria would correct itself. The treatment was surgical consisting of operations to which I have given the somewhat contradictory designation of *extendocontraction* of a tendon.

A few years since all my efforts would have been directed against the esophoria and the essential defect, the declinations, would have remained uncorrected. The operations would perhaps have consisted of tenotomies, a class of operations which I now rarely ever perform.

It is proper here to inquire whether such a degree of declination as I have indicated is sufficient to induce great nervous disturbance and a tendency for the eyes to deviate in. In reply to this inquiry it should be said that the degree recorded did not, of necessity, indicate the full extent, possibly not half the extent of the defect. There is the automatic effort which the patient is bound to make to correct the defect which must be taken into account. In any case the degree recorded is large and quite as much as would account for great nervous disturbance as well as for the tendency of the eyes to deviate inward. Then in respect to the correction of this defect it should be said that no very considerable degree of declination can be corrected by any single practical surgical procedure with which I am acquainted. It is a good result when, as the sequel of an operation 2° or 3° of permanent correction is obtained, indeed it is rare that more than 2° is accomplished, although in exceptional cases considerably more is apparently accomplished. This may, in large measure, be due to the fact that the unrecorded declination becomes, later, manifest as in truth it does.

Between July 16, 1907, and July 31, 1908, I performed seven operations for declination and I could observe the general progress of the case as the work went on.

After the first operation the record on July 22d was: "His movements were notably reduced in frequency and violence."

August 1st. After a second operation, done late in July: "Had not manifested even a trace of chorea while he had been in the consulting room (half an hour). Said that he had not twitched since yesterday."

August 3d. "Was kept in the consulting room for a considerable time in order that I might observe him. During the time (about an hour) there was no twitching, but once I detected a sudden drawing of the breath, not the violent sucking of a few days ago, but such as could be observed by one watching for it."

August 16th. "Nervous to-day though not nearly so bad as formerly."

August 20th, the third operation.

August 26th. "While in on the 23d I observed a few twitchings but to-day he and his mother had been in the consulting room half an hour and I was not able to detect the slightest choreic movement except at one instant when there was a sudden inspiration."

October 2d. Record showed that preceding an operation done late in September the boy had had some very mild twitchings which, however, were discontinued after the operation. The record continued: "Since the operation there had been a great general improvement over even the state prior to that time. This morning he came in before other patients. I talked with him about books he had read for half an hour and there was not a convulsive movement."

October 15th. Weight, 107 pounds. No indication of chorea. (The gain in weight since July 16th was five and a half pounds.)

Between this date and early December there were a few records of somewhat nervous days but these attacks were of the mildest form, perhaps a sucking in of breath or a grunt but "no kicking."

From November on, records of nervousness were rare. Weight, February 7th, 115 pounds, a gain in seven months of thirteen and a half pounds.

I had found that the boy had a taste for drawing and thinking that this taste might be made available in leading him to some trade as an artisan I made arrangements with an artist friend to take him as a pupil in modeling and drawing. This was early in December. He made good progress in these directions but in the spring following his parents removed to another State and took the boy with them. He was placed in the employ of a grocer and he reported to me up to the last of July from time to time. He was working hard, earning something to aid the family, and was not nervous.

I have not of late been able to get in communication with him but it would not be surprising if some vestiges of the old trouble should manifest themselves from time to time for he had, at his last visit, esophoria 5°, *declination right 0°, left + 2°.* In view of the remaining esophoria the declination is probably considerably more than is recorded.

The time of observation of this case was rather more than a year during which there was, at first, a rapid and then a steadily progressive improvement. While, during the early weeks of treatment, moderate nervous attacks occurred from time to time, as the months progressed these days of restlessness became progressively less frequent until during the last few months no return of the malady was observed. Still a year later I was informed by his mother that he was well, and again later than that I was told by his brother that he was well and at work.

If the change in this case can be justly attributed to the improvement in the adjustments of the eyes we may well inquire in what relation were the purposeless movements to the eyes. The readiest reply would be, the movements must be reflex. Formerly this would have been my own reply. To-day I would say that there may be and probably is a reflex element in the case but that in the main the movements are exaggerations of movements demanded in the eye adjustments. In a case so complicated as this it would be hard to trace the demand upon individual muscles, and a discussion of that demand might be deferred and taken up in connection with cases in which the individual influences may be better traced.

We may also with advantage consider the fact that the boy was unable to walk until a later period than most other children walk, and that when he did walk he was accustomed to stumble and fall. When first seen by me there was not the least defect in knees or ankles. This is not an unusual history of people who have high degrees of declination. The want of confidence to begin to walk and the inability to avoid stumbling and falling is incident in such cases, not to any physical defect in the joints or members; it arises from the fact that the child cannot make the sense of sight and the muscular sense coordinate. The child rises to his feet and his relation to the floor is like a ship's deck to a novice. He cannot locate it with certainty and when eventually he does learn to walk he is continually betrayed by his faulty means of localizing the objects before him. This difficulty is not always overcome in early childhood. I have observed many children who have reached from six to twelve years of age who are victims of this treacherous method of seeing. I recall a girl of twelve, brought by her mother because of some trouble with the eyes. An operation for declination was done. A day or two later the mother told me that for the first time in her life the girl had walked independently. From the beginning of her attempts to walk, which were much delayed, she had insisted upon taking hold of the hand, a fold of a dress, or even a ribbon of the person walking with her and that without this guide she would sit down anywhere in the street refusing to take a step until the usual guidance was supplied.

Even in later life the necessity for a substitute for the eyes is not infrequently demanded. A lady who had spent much time in hospitals and who was much more ill than those who treated her for exaggerated hysteria admitted, came into my consulting room bearing heavily upon two crutches. I could not learn that there was any affection of the joints, but learned that she had been on crutches for a number of years. She had violent choreic twitchings of the eyes, the head, and the body, and it was for these that she sought help. The eyes showed extreme anomalies of adjustments. Soon after a moderate improvement had been brought about one crutch was abandoned. As treatment advanced a cane was substituted for the other, and with still further reduction of the visual confusion the cane was thrown aside. Such cases, not all so notable as these, are much more common than one would suppose.

It may be added that the case I have reported is by no means an isolated one. It has been presented: 1. Because it was one of an exaggerated type; 2, because, during the fourteen years of the steady progress of the malady the patient had had the advantage continuously of the advice and treatment of learned, able, and conscientious medical counsel; and 3, because it is better to present one case fully than several imperfectly.

22 EAST FORTY-SIXTH STREET.

THE COMPARATIVE VALUE OF DIFFERENT METHODS OF CANCER TREATMENT.

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Every new therapeutic agent is invariably applied to the treatment of malignant disease, a fact that must be accepted by the profession as a confession that present methods of combating these dreaded growths are inadequate and unsatisfactory.

Usually these new found remedies are sources of disappointment to the original investigators only, and, because of their negative value, they are placed with the large list of tried and found wanting. Occasionally, however, some investigator will observe changes in the appearance of the diseased condition which will cause him to believe that the individual suffering from cancer has been benefited and, with the generosity for which the medical profession alone is known, will announce his discovery to his coworkers. Usually the man is sincere in his belief that the method of treatment described as beneficial is really of value, and it is only after the trials of other laborers have been added to those of the original investigator that sufficiently large data can be obtained to correctly determine the true status of the new remedy. In no instance so far has any method of treatment proposed fulfilled the requirements of an exacting medical science. However, it is my belief, that investigators in general are sincere when they state to their medical brethren that they believe such a method of procedure to be of benefit in the treatment of cancer, and the latter should not immediately condemn the method on failing to obtain the same results in every case that appears in their own either limited or more extensive practice. Believing, as I do, it will not be amiss to compare the various treatments that have been proposed, with the hope of finding the grain of truth in each, so that a comparison of all may possibly lead us in the right direction.

In a study of this nature it might be well to consider the subject from two viewpoints, which, however, cannot be definitely separated one from another as will be shown later. Of these two methods of approach, the first may be termed local, and the second general or systemic. The first would include all surgical procedures, the local application of caustic ointments, zinc chloride, arsenic, and other chemicals, including the use of trypsin and thymus preparations, as well as the various methods of freezing superficial growths, the x ray, radium, and electricity. The second group includes all methods by which the attempt is made to destroy the cancer cells through the agency of some specific medication carried by the blood stream. In this class I would place the mixed toxines of the *Streptococcus erysipelatis* and the *Bacillus prodigiosus* which have given such satisfactory results in about ten per cent. of cases of sarcoma in Coley's hands.

Second, the employment of various drugs, either orally or hypodermically; and lastly, the treatment of carcinoma with the ascitic fluid obtained from a recovered case, a preliminary report of which has been given by the late Dr. Hodenpyl. For reasons to be explained later, the x ray and the use of radium must be included in this class as well as the first. To this class I would add the injection of cancer residue.

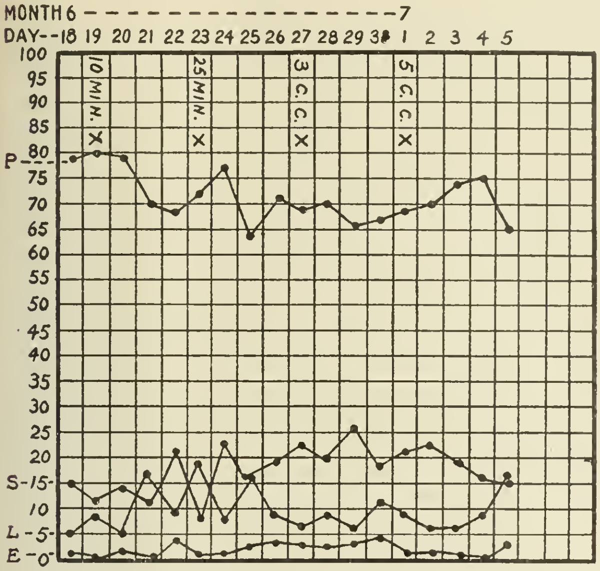

Chart I.—Case XXVIII.—*P*, polymorphonuclear cells; *S*, small mononuclear cells; *L*, large mononuclear cells; *E*, eosinophile; *X*, date and amount of injection.

In a consideration of the purely local attempts to eradicate any form of this disease, surgical removal is the only one that has met with any measure of success. From the clinical observations of the past, the fact that cancer is primarily a purely local affection, is one which is firmly established, and if the operator can be radical enough and is sufficiently skilled in his technique so that every malignant cell is removed from the host at the time of operation, then it can be stated that a complete cure is the result. How frequently such is the case may be judged by following up the postoperative records of the victims of this disease, and even when they have been fortunate enough to receive the present highly radical treatment of the most skilled surgeons, yet the percentage of cancer individuals living five years after operation is not greater than forty. The surgeon will then complain that the attending physician did not bring the patient for operation at a sufficiently early period in the disease. To this the family physician can frequently answer that he was not consulted soon enough. So the blame is eventually thrust back upon the patient, who may in perfect honesty state that the small nodule in the breast was not noticed until the lumps appeared under the arm, or that he thought the ulcer on the lip was simply a cold sore, of which he had had many before, or again, that he had noticed gas on the stomach several times before the complete obstruction appeared, but had thought it simply an indiscretion in diet.

Five years ago I saw a case of carcinoma of the splenic flexure that formed no tumor mass that could possibly be palpated from without. The patient was brought in with intestinal obstruction and a complete resection of the bowel performed. No enlarged glands were found, and those examined in the removed specimen showed no microscopical evidence of cancerous involvement. An uneventful recovery followed, and the patient apparently regained his normal health. Yet, within two years, the man was dead from a secondary involvement of the liver. Was the surgeon to blame, or the attending physician, or the patient himself? It is true that after the findings of the operation were explained to him, he remembered several and later more frequent attacks of indigestion, but as he expressed it, "they did not amount to much." Without the aid of more frequent examination of people in general, by a competent physician, or of some specific diagnostic reaction for cancer, the benefit of surgery alone has reached almost its highest point, and yet the percentage of complete recoveries proves that this method of treatment can never be all sufficient.

Of the purely local methods of treatment little need be said. The application of caustic ointments is now most generally left in the hands of quacks, since they have long ago been found to be of little value by an observing medical profession. Zinc chloride and other corrosives are used simply for the temporary benefit that cancer sufferers derive, and not from any hope of cure. Freezing, burning, and the x ray are used only for superficial forms of cancer, generally of slow growth and not liable to form rapid metastases. These last methods are also employed where operative procedure is denied by the patient. However, the x ray has a somewhat broader field than the application of extreme cold or heat, and in the hands of some operators the percentage of apparent recoveries is as good if not better than that resulting from surgical procedure. Pusey has reported several cases which have been much benefited where surgical removal failed, and other workers in the same field have reported equally good results. This fact leads me to

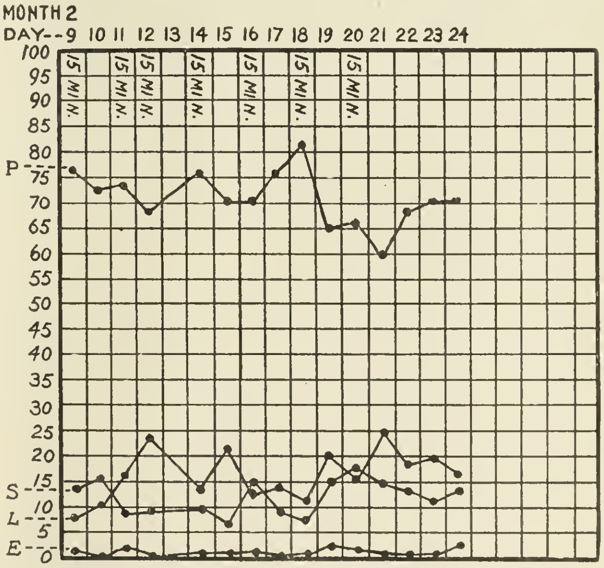

Chart II.—Case VIII.—*P*, polymorphonuclear cells; *S*, small mononuclear cells; *L*, large mononuclear cells; *E*, eosinophile.

believe that other factors must come into play through the exposure of cancerous tissue to the x ray, besides the local destruction of tissue—a factor that I will refer to later in this article.

It is my belief that an ever generous Nature attempts to bring about a cure in the sufferer from cancer in much the same manner as she does in those who are the victims of infectious diseases, and while the actual cures in malignant conditions are unfortunately the extremely rare exceptions, yet the attempt to bring about this result is the rule rather than the exception.

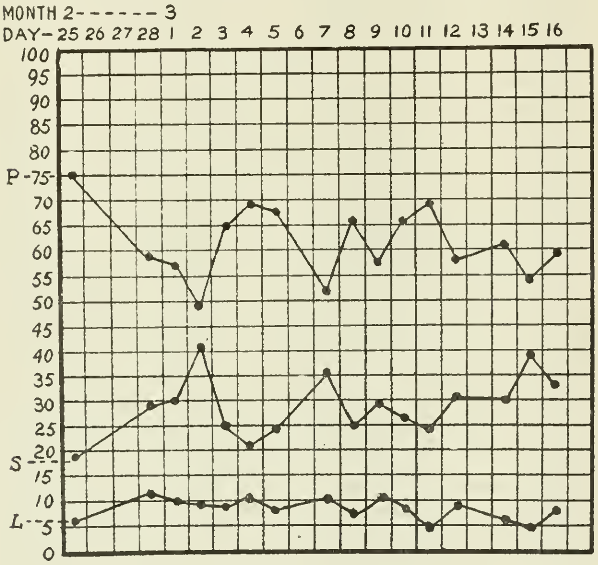

Chart III.—Case XV.—*P*, polymorphonuclear cells; *S*, small mononuclear cells; *L*, large mononuclear cells.

A few undoubted cases of malignant disease have been observed to retrogress and undergo apparent cure by observers whose ability is of the highest. Chief among these reported cases is the famous one of the late Dr. Hodenpyl, whose careful and painstaking work demonstrated not only that self recovery was possible but also that the ascitic fluid furnished by the patient whom Nature had cured, exerted a beneficial effect when injected into other sufferers from this disease.

The fact that primary tumors grow with lessened rapidity at times, and even that they become smaller when metastasis occurs, is a clinical observance that dates back many years. Mention of this fact is made in Holmes's *System of Surgery*, and it must lead us to suspect that Nature in some manner or other is attempting to govern the growth of the cancer cells.

Thus these two facts are well established; first, the body in exceptional cases may of itself destroy all cancer cells; and, second, this tendency is shown in almost every case, by means of periods of lessened rapidity of growth of malignant tumors, and sometimes actual decrease of their size, after which growth recurs with renewed vigor. In the latter case some authors attribute the temporary decrease in size to lessened blood supply to the malignant tissue. However, this view is not compatible with the clinical observations of this disease, in that the most luxuriant growth frequently occurs in areas which apparently are but poorly nourished, while areas that are in more close relation to the blood stream seem at times to be more prone to retrograde. In this connection McConnell states that "in the histological examination of mouse tumors the more necrotic portions are in the immediate neighborhood of areas of hæmorrhage, indicating that there may be some relationship between the two."

The occurrence of a few cases of spontaneous recovery together with the knowledge that most malignant tumors have so called periods of temporary quiescence, must lead us to believe that the body itself forms the specific ferment for the destruction of malignant cells. Unfortunately, in by far the majority of cases, the amount of ferment formed is so small that it is quickly exhausted, so that reproduction of the malignant cells occurs with much greater rapidity than their destruction; the rapid or more or less gradual growth of the tumor being the result. In the cases of self cure a sufficient amount of this specific proteolytic ferment must be formed to destroy all of the cancer cells present. With this belief I began the work with cancer residue, and the reasons for using only this portion of the cancer cell are as follows:

The work of V. C. Vaughan on cellular proteids has demonstrated that any proteid cell may be split into two definite chemical parts by heating the proteid in a two per cent. solution of sodium hydrate in absolute alcohol. One portion, which contains the toxic radical, is soluble in the alcohol, and the other portion, which is insoluble, is termed the residue. When the purified toxic portion is injected into animals we obtain no immunity to the entire cell, but only a slight tolerance to the toxine itself. This can best be illustrated by comparison with the tolerance obtained to morphine in those addicted to the use of this drug. The residue, which is insoluble in the alcohol, is soluble in water, and when this portion of the proteid cell is injected into an animal that animal becomes to a certain degree immune to the injection of the entire proteid.

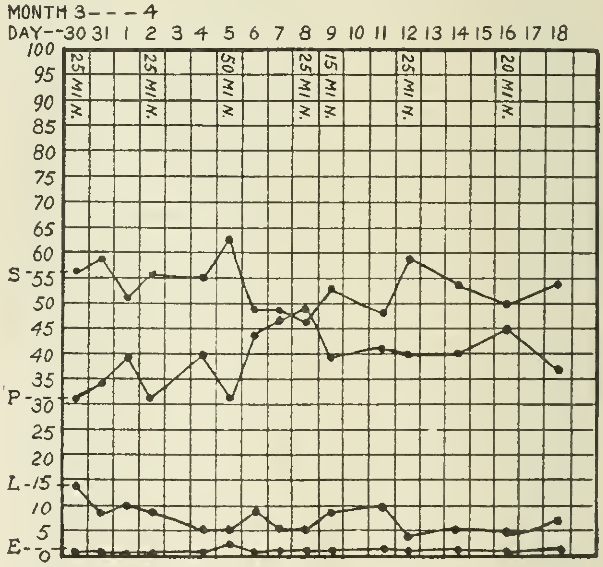

Chart IV.—Case XII.—*S*, small mononuclear cells; *P*, polymorphonuclear cells; *L*, large mononuclear cells; *E*, eosinophile.

if the latter is a living bacterial cell. In other words, the residue contains the specific chemical group that distinguishes that proteid from any other proteid.

The advantages of using only this portion of the cell are, first, it contains the specific portion of that cell; second, it contains no toxic radical and consequently causes no local irritation; third, it is soluble in water and therefore the dosage can be measured with exactness; fourth, the preparation of the cell in this manner renders the substance injected absolutely sterile, no matter how infectious it may have been to start with.

So many inquiries have been made concerning the best method of preparing cancer residue and the technique of its preparation has been so much simplified of late, that I deem it best to give a rather detailed account of this process. My present procedure is as follows: A small piece of the tissue is first examined by frozen section, in order to ascertain the exact nature of the growth. Next the malignant tissue is dissected as freely as possible from all surrounding tissues, after which it may be placed in absolute alcohol and kept until opportunity is given to carry out the following steps. However, if the tissue can be split up within four or five hours, it may be reserved in the fresh state. Next the cancer material is ground as finely as possible with an ordinary meat grinder, but if the amount is small, loss may be saved by cutting with scissors and forceps, after which it is placed in a flask which contains about fifteen times the volume of material of a two per cent. solution of sodium hydrate in absolute alcohol. It will facilitate the solution of the sodium hydrate in the alcohol if the former is first pulverized finely in a mortar. The flask containing the material is next heated over a water bath for from two to three hours, depending on the amount of tissue that is to be split up. For safety only, the flask is connected with some form of condenser before heating. However, the alcohol should not be heated to such a degree that it actively distils, as too much heat will absolutely destroy the activity of the resulting residue. At the end of two or three hours the tissue within the flask should appear as a finely divided powder. If this is not the case it is my practice to allow the flask to stand over night, after which time the supernatant fluid is decanted and a sufficient amount of the alkaline alcohol solution added to make up the original volume, heat being again applied in the same manner.

Next the solution is filtered off and the residue washed upon the filter with absolute alcohol until its reaction is no longer alkaline. While still somewhat moist the residue is weighed upon the filter, a filter paper of equal weight being placed upon the opposite balance to offset the weight of the one containing the residue. Next it is transferred with a sterile spatula to a sterile bottle and sufficient sterile water added to make the desired solution. With small amounts of material I prefer a one per cent. solution, with larger amounts a two per cent. Practically all of the residue is soluble in water, but if such is not the case it may be filtered. Lastly, sufficient phenol is added to make the given amount contain 0.5 per cent. This is kept as stock solution and injections given of the same.

If a specific ferment is prepared within the body by means of the injection of the nontoxic radical of the cancer cell, this new enzyme must be formed in either the cellular or fluid elements of the blood, and I have attempted to demonstrate this fact through daily blood examinations. As yet I have not tried to prove the presence of a new ferment chemically, but such a step would logically be next in order.

When we stop to consider the chemism of immunity in certain bacterial infections, especially those of the pyogenous type, we are forced to believe that the chemical substances which are antagonistic to bacterial growth, are formed chiefly through reaction with the white blood corpuscles of the polymorphonuclear variety. This is shown not only by the general leucocytosis but also by the relatively higher percentage of this form of cell in the differential count. It is true that in certain infectious diseases, notably tuberculosis, the relative number of polymorphonuclear elements may be below that normally found. However, injections of tubercle residue cause an increase in the percentage of these cells.

With these facts in mind I have made daily differential counts in some twenty-five patients with various forms of cancer who were receiving injections of cancer residue. The results have been interesting and, while in many cases the variation is so slight that it might be alleged by some to be of no significance and easily accounted for by errors of technique, yet they have been so uniform that I am forced to believe that the changes found are of importance. Many of my recent counts have been made by internes in Harper Hospital (under the direction of the pathologist, Dr. Sill), who were not acquainted with the reasons for their making nor the dates upon which injections were made. Outside of the fact that one might classify certain mononuclear cells as small cells and another, the same cells, as large, the results have been uniform and in keeping with what I had previously found.

In general, it can be stated that the total number of white blood cells is not appreciably altered by injections of cancer residue, but that only the relative proportion of the different cellular elements is affected. Within from twenty-four to forty-eight hours following a residue injection the percentage of polymorphonuclear elements falls from five to forty per cent., while there is a corresponding increase in the percentage of mononuclear cells. To illustrate this fact the accompanying charts have been made. Charts 1 and 2 represent well the average charts among twenty-five cases. In Chart 1, a drop of ten per cent. of polymorphonuclear cells is observed within forty-eight hours, and a corresponding increase in the mononuclear cells, especially those of the large type. In Chart 2 the drop is not so marked but a total difference of twenty per cent. is found during all the daily readings. As will be observed, in Chart 1 residue injections were given only when the percentage of polymorphonuclear elements was on the increase, while in Chart 2 no reference was made to the blood count when injections were given. The case of Chart 3 is the only one which belongs to the group of sarcoma, and the chart is presented here merely to show the extreme variation in the proportion of the various types of cells that may follow the administration of the autogenous residue.

While it is not my intention to make in any way a case report at the present time, yet I cannot satisfactorily explain the blood findings represented by Chart 4 without making a few remarks concerning the condition of the patient. The case was one of firmly fixed carcinoma uteri which had confined the woman to her bed for a period extending over four months. Three weeks after injections of residue prepared from a breast cancer were begun she was able to be up and about the house. At present, four months after treatment was started, she is again actively engaged in household duties, has gained twenty pounds, and makes frequent trips out of the city. In other words, this is one of my most favorable cases and I ventured a hopeful prognosis at the beginning of treatment upon the strength of the blood findings alone. The relative high percentage of mononuclear elements even before injections were commenced, indicated that the body itself was making vigorous efforts to combat the diseased condition.

While these findings were much in the nature of a surprise at the start, yet a review of blood changes previously observed in cancer shows that such results might be expected.

In a review of the present extensive literature concerning blood changes in malignant disease, we find that these may be extremely varied, but in some cases, especially in those of rather advanced type, the blood picture may be so accurate as to be of diagnostic importance. Especially is this true in certain forms of sarcoma, where the count for each cubic centimetre of white cells may be increased to forty or fifty thousand with a relatively high percentage of nononuclear cells. While a like picture is less frequently seen in carcinoma, yet it has been observed in many cases, and some investigators have called particular attention to the presence of the large mononuclear form of leucocytes. Again, it is now a well established fact that a high percentage of polymorphonuclear cells in malignant disease usually signifies a rapidly growing tumor.

These observations, when compared with the blood changes found in connection with the administration of cancer residue, are of particular interest, since the type of mononuclear cell which is found to take part in the most decided increase is the myelocyte, with a fairly dark staining nucleus surrounded by a larger amount of protoplasm than is found in the small mononuclear cell. Also the protoplasm of these cells seems to contain, in most instances, a greatly increased number of azure granules.

The temporary conclusion that must be drawn from the blood changes noted is that the specific ferment which destroys the cancer cell is in all probability formed through a chemical reaction with the cells of the mononuclear variety.

As before mentioned in the case of bacterial infections, the polymorphonuclear leucocyte is the cell of most importance. However, it is reasonable to suppose that in both cases the blood cell is simply the laboratory in which the specific enzyme is manufactured, and that in all probability the ferment is present in the serum as well. Thus it appears that while the polymorphonuclear cell is the chemical laboratory in which the specific ferment is formed in the case of bacterial infections, the mononuclear cell is the essential element when dealing with altered autogenous cells. In this connection it is interesting to note that the blood of the infant, when all of the tissue cells are in an active reproductive stage, contains a very high percentage of mononuclear cells.

But to return to the consideration of the comparative value of some of the various methods of treating carcinoma, we find that every method may be classified in one of two groups, namely, those methods that destroy or remove the cancer cells locally, and those methods which act through the medium of the blood stream. However, no definite boundary line can be drawn between these two groups, since the local destruction of cancer cells in all probability causes the formation of a slight amount of specific ferment toward the destruction of the other cells, through the chemical changes rendered necessary in removing the comparatively few dead cells that must be taken care of by means of the blood elements. Again, the body itself, in most cases manifests at varying times some degree of resistance toward malignant growths, a factor that should always be taken into consideration. Thus I have noted in three separate cases, a direct increase in the mononuclear leucocytes of from ten per cent. to twenty per cent. the second day after removal of a new growth by surgical means, and no other treatment. In the ordinary operative case one generally expects a slight increase in the percentage of polymorphonuclear cells following anæsthesia, so that these findings were contrary to rule and are best explained, I believe, by supposing that the removal of the cancer tissue temporarily causes an increase in the percentage of the normal specific ferment present. Thus, if but a few malignant cells remain after operation, the surgical procedure alone, in all probability, occasionally brings about a cure.

Next let us consider the fact that the use of the Röntgen ray in some cases of superficial carcinoma gives better results than surgical procedure. It has been demonstrated that rather prolonged exposure of proteid substances to the x ray splits up the proteid exposed in apparently the same manner as the solution of sodium hydrate in absolute alcohol. This being true, it is reasonable to suppose that we have both factors at work following its application —first the local destruction of the carcinoma cell, and second the absorption of the split off residue by the body fluids, which in turn forms the active ferment which helps destroy the malignant cells remaining. However, the amount of exposure required is of such severity and the dosage so uncertain in measurement, that its use should be left to those who possess special training in the handling of the Röntgen ray.

The action of radium upon malignant growths is in all probability similar to that of the x ray. Here again, however, we have a substance whose dose it is impossible to measure with exactness and which is capable of destroying healthy tissue as well as diseased, so that its use must be accompanied with a considerable degree of danger. Again, it is impossible to estimate what proportion of cancer cells are split up in a correct manner so as to be of service in the formation of the desired ferment.

The use of caustics locally apparently is limited chiefly to the destruction of the tissue with which they come in contact, but here again we have the possibility of deriving benefit through the splitting up of dead malignant cells by the lymphocytes of the host. Clinically the best results are obtained in situations where in all probability a comparatively greater portion of the removal of the cellular detritus must be accomplished by the body tissues, as is the case when zinc chloride is used in inoperable carcinoma uteri.

When we consider the subject of freezing small epithelial growths, we are again confronted by two factors—first the actual death of a certain number of epithelial cells due to the exposure to extreme cold, and second the necessity for the removal of these dead cells by the bodily fluids, during which process they must be split up in some manner, thus forming a certain degree of immunity. However, again we are unable to use the therapeutic agent with exactness, so that its use will always be of doubtful value.

Thus we can reason that with every method of treatment proposed for malignant conditions in which there is some degree of destruction of the cancer cells, the resulting chemical changes necessary to bring about the removal of the dead cellular elements will cause a certain percentage of ferment to be formed which will be available for the destruction of a given number of living cancer cells. This would be true of trypsin and possibly to a slight degree of the thymus preparation and formic acid derivatives that were previously used. The one exception apparent is the use of Coley's mixed toxines in sarcoma, and, if the theory which I have given is true, we must consider that these toxines, which are a general cellular poison, have a special affinity for certain varieties of sarcoma cells which might be comparable to the affinity of quinine for the malarial parasite or of nerve cells for the tetanus toxine. Thus the cells composing certain varieties of sarcoma are much more easily destroyed by the mixed toxines of erysipelas and prodigiosis than the cells which compose normal tissues, because of the greater chemical activity between them. If this statement is true, the question can well be asked, Why is it that the use of these substances does not cure carcinoma? There are several reasons why no permanent benefit can be obtained from the use of these various methods, even though with many of them a temporary improvement is sometimes observed. In the first place, the amount of specific ferment actually formed is in all probability very small and quickly exhausted. In the second place all of the given methods are destructive not only for malignant cells but for normal tissue as well. Consequently their use is restricted and not unattended with danger. Thirdly, there is absolutely no possibility of ascertaining the amount of specific ferment formed, or method of deciding when the formation of a new amount is needed. This last is an extremely important question since the destruction of cells at the incorrect time might easily use up the specific ferment instead of causing the body tissues to form an increase, thus doing more harm than good.

In this connection the work so far accomplished shows that injections of cancer residue should be given only at the periods during which the percentage of polymorphonuclear leucocytes is increasing. If given otherwise, the injection may cause increase instead of decrease in the percentage of this form of cell and corresponding depression to the patient. Again, care must be exercised that too large an amount of cancer tissue is not split up at one time, since such a step might throw a fatal dose of the toxic group into activity.

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RESULTS OF AUTOGENOUS VACCINE THERAPY IN ACUTE AND CHRONIC MIDDLE EAR SUPPURATIONS.

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The accepted ætiological factor of moment, in both the acute and chronic middle ear suppurations, is the introduction and propagation within the middle ear spaces, of pathogenic microorganisms. Vaccine therapy, aiming as it does to establish an active tissue immunity, offers at first glance a means to combat this local invasion.

To avoid empiricism in their use, and to understand the question confronting us, certain elemental factors must be studied. This necessitates correct technique in preparing the vaccine; a comprehension of the pathological lesion in middle ear suppurations; and finally a knowledge of the anatomical structure of the tissues involved which by the peculiarly characteristic arrangement of its component parts, influence the production locally of antibodies.

In this short report, which in its nature is to be regarded as a "preliminary communication," I will forego the detailed pathology of acute and chronic middle ear suppurations. Suffice it here to draw attention to the two tissue elements usually involved either separately or together. The result of a bacterial invasion of the middle ear space produces an exudative inflammation in the lining mucosa of the middle ear cavities alone, or in combination with a necrotic or carious lesion of the bony structures immediately adjacent to the mucosa. This bone lesion is of varying extent. In the acute cases, when adequate drainage is early established, the lesion is found to be located chiefly in the mucous membrane.

Regarding the anatomical structure in which the disease is located, it becomes necessary to bear in mind that the middle ear spaces are surrounded by bone tissue having a relatively meagre blood and lymph supply,—elements which handicap the production of antibodies and coincidentally lessen the effects of vaccine therapy.

Finally we must understand, in the chronic middle ear suppurations which have existed for years, and which have large bone areas involved in carious or necrotic degeneration, that even with the subsidence of the bacterial invasion, the disease often remains uncured. An otorrhœa in such cases may persist because the body is ridding itself by throwing off gradually the dead or decaying bone in the form of an ear discharge.[1] In such cases I believe the inflammatory reaction changes from the infectious (bacterial) to the noninfectious type.

As a corollary to this it follows that in chronic middle ear suppurations with bone lesions, even if vaccine therapy is successful in inducing added immunity to the bacterial invasion, that such cases are not thereby cured of their disease, nor is it reasonable to expect a cure,—that is, a dry ear,—as long as there remains *in situ* dead or decaying bone either in the tympanic walls or in the ossicular chain.

Hence, *a priori,* such cases should be separated from the middle ear suppurations whose lesion is an infection of the mucous membrane. This should be done not only for the reason cited before, but also that a better judgment of the efficacy of the autogenous vaccine therapy in the various types of middle ear suppuration, may obtain.

TECHNIQUE.

After carefully cleansing the external auditory canal by dry wiping with sterile cotton, the material for inoculating the culture tube is taken through a sterile ear speculum from within the tympanic cavity wherever this is possible. In cases where the drum head perforation is small, rendering such a measure impossible, the material for inoculation is taken from the perforation. In withdrawing the inoculated needle, care must be exercised to avoid coming into contact with the external auditory canal walls.

The culture of microorganisms is grown on inclined agar for from eighteen to forty-eight hours depending on the vigor of the growth. When grown, the growth of bacteria is emulsified with physiological salt solution using from 5 to 10 c.c. of the salt solution for the purpose. A count of the bacteria is then made so as to estimate the number of bacteria to the cubic centimetre. To do this equal parts of the bacterial emulsion and normal blood are smeared upon a slide and stained with Wright's stain. The number of bacteria and of the red blood cells in successive fields are now counted until at least 200 red cells have been counted. The estimation of bacteria is then reckoned on a basis of 5000 million red blood cells to the cubic centimetre. The vaccine is then standardized by dilution. Thus prepared, the vaccine is sterilized by heating at 60° C. for one hour; after which a little preservative in the form of lysol solution is added. The vaccine is then placed in sterilized glass tubes, and sealed until used.

In the more recent vaccines made, the time of sterilization has been considerably shortened, in some instances bringing it down to fifteen minutes of heating. Tests of the vaccine, as to its sterility were made, and inoculations of cultures taken from it, before the vaccines were injected, not only to protect the patient, but also to furnish data on the shortest possible time necessary to effect sterilization.

Another method of preparing mixed vaccines, is to plate the bacteria obtained. From the different germ colonies separate cultures are grown, and the emulsified vaccines from all of them mixed in the desired dilution.

CASES AND RESULTS.

The empirical employment of our vaccines is avoided by exact diagnosis of the lesion with which we are dealing in the given case. Furthermore, to truly estimate the effects of the vaccines no treatment of any other nature was employed during the time the effects of vaccine therapy was under observation. The patients were instructed not to douche or cleanse the ears, and nothing in the nature of treatment was administered at the clinics. The patients were simply observed at each recurring visit and their conditions noted. In all of the patients efficient drainage had been established, and only in those with profuse otorrhœa was even dry wiping with cotton indulged in.[2]

The cases submitted to the test belonged to three types of middle ear suppurations.

I. Cases of *otitis media purulenta chronica* evidencing clinically *bone necrosis or caries* in the tympanic cavity or annexa.

II. Cases of *otitis media purulenta chronica* whose lesion was a *chronic suppurative inflammation* of the lining mucosa of the tympanic and adjacent cavities.

III. Cases of *otitis media purulenta acuta* which possessed no characteristic of chronicity.

The detailed observations and results follow:

Group I. Chronic middle ear suppurations with bone lesions.

Case I. Duration of disease two years, showing a very profuse otorrhœa. Culture on agar for twenty-four hours —*Bacillus pyocyaneus.* Vaccine strength, 50 millions to 1 c.c. April 4, 1910, injected 1 c.c. into right shoulder. General reaction consisting of fever and malaise, profound. Otorrhœa less in amount when case was seen seven days later. Mumps developed and the child did not return for further observation. Case considered as improved.

Case II. Duration of disease one year, showing a dark, profuse mucopurulent otorrhœa. Culture on agar for twenty-four hours—*Staphylococcus aureus* vaccine strength, 5 millions to 1 c.c. April 4, 1910, injected 1 c.c. into right shoulder. No reaction noted. April 8, 1910, otorrhœa somewhat less in amount. Again injected on April 11, 17, 25, and May 2, 1910. Some constitutional reaction between April 11, and April 14, 1910. No change in the ear however. New vaccine of a strength of 50 millions to 1 c.c. made and ½ c.c. injected May 6, 1910. Final observation showed case to be uninfluenced by the treatment.

Case III. Double involvement, *right ear no bone lesion,* but *left ear* showed *bone lesion.* Duration of disease two and one half years, showing a profuse, thick, grayish discharge from both ears. Eighteen hour growth of *Staphylococcus albus* and *Bacillus pyocyaneus* on agar-agar. Vaccine strength—150 millions bacteria of this mixed culture to 1 c.c. Injected 1 c.c. alternately into right and left shoulders on March 12, 22, and 29, 1910. No reaction noted, and no change in otorrhœa. April 25, 1910, new culture and vaccine made and injected—a twenty-four hour growth of *Staphylococcus albus* on agar-agar. Strength of vaccine—5 millions to 1 c.c. This gave no reaction and no result. On May 12, 1910, new vaccine made and injected from eighteen hour culture of *Staphylococcus albus* and *Bacillus pyocyaneus,* strength 5 million bacteria to 1 c.c. injected into left shoulder. Some pain reported and also general feeling of malaise for two days. Resulted in right ear becoming dry. Left ear showed no change. Case seen June 8, 1910, for control. Right ear still dry, left unchanged. A new vaccine was made and injected. Growth of *Bacillus pyocyaneus* 300 million to 1 c.c. No reaction. No result on left ear.[3]

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[1] During the last year, while making routine examinations of ear discharge for microorganisms, it has been my experience occasionally to get sterile culture sets from ears which were for a long time under cleansing antiseptic treatment. This finding was present when no appreciable diminution of the discharge could be made out, either by the patient or myself in the given case. In one case, this finding was repeatedly made, and in another in which I subsequently operated the secretions from within the mastoid cells when cultured were likewise found to show no growth. Further investigation of this observation is under way. In passing, however, I may add that the ease with which the nonbacterial discharge conceivably becomes reinfected by a secondary invasion of microorganisms from the external auditory canal makes the investigation and further substantiation of this observation difficult.

[2] While this work was in preparation, Dr. Nagle, of Boston, reported to the American Laryngological, Rhinological, and Otological Society at Washington, April 28, 1910, upon forty-one cases of chronic middle ear suppuration of which forty patients were cured by injecting autogenous vaccines. The point before referred to of exact diagnosis of the lesion in reported cases left us in doubt as to the exact class of cases in which Dr. Nagle used the vaccines. Furthermore, other treatment than the vaccines were simultaneously employed.

Case IV. Duration of disease some months over one year, showing a profuse, dark grayish mucopurulent discharge. There was an aural polyp present in the affected ear which was first removed. An eighteen hour growth on agar gave *Staphylococcus albus.* Vaccine strength, 5 million to 1 c.c. injected March 11, 1910. At first otorrhœa was lessened in amount, then it became more profuse than before. No reaction noted. Again injected March 15, 1910. No result. New vaccine prepared from another growth showing *Staphylococcus albus* and a small rod shaped bacillus which was not identified. Vaccine strength of this mixed vaccine equalled 50 millions to 1 c.c. No constitutional reaction and no effect noted on ear. Patient again injected March 25, 1910, and March 30, 1910, without result. Another culture made, it again gave *Staphylococcus albus* and an unidentified small rod shaped bacillus. Vaccine strength, 250 millions to 1 c.c. Injected 1 c.c. on April 8, 1910, and April 18, 1910, without constitutional reaction. No effect on diseased ear noted. Case examined June 22, 1910, showing *status idem.*

Case V. Duration of disease about one year, showing a profuse purulent discharge. Forty-eight hours' growth of *Staphylococcus albus* obtained on agar. Strength of vaccine, 75 millions to 1 c.c. Injected 1 c.c. right shoulder April 25th, with marked constitutional reaction, necessitating patient being in bed April 26th, and 27th; no effect noted on otorrhœa. On May 5, 1910, injected 0.5 c.c. of same vaccine. No result. New vaccine made, strength 50 millions to 1 c.c. of streptococcus (which was at this time found in the ear) injected on May 20, 1910, 0.5 c.c. with no reaction at all. No results on otorrhœa. On June 12, 1910, another vaccine was made. This time culture was found to contain an unidentified diplococcus and a short rodlike bacillus. The vaccine strength of this growth equalled 5 millions to 1 c.c. No reaction resulted. No effect on the otorrhœa observable.

Case VI. Duration of disease about one year, showing a thick, creamy discharge. A growth of *Bacillus pyocyaneus* obtained on agar in twenty-four hours. Strength of vaccine 25 millions to 1 c.c. Injected 1 c.c. on March 15, 1910, resulting in considerable reaction, but no effect on the otorrhœa. A new vaccine was obtained whose strength equalled 50 millions. *Bacillus pyocyaneus* to 1 c.c. and of this 1 c.c. was injected on March 22, 1910, and 24, 1910. No reaction apparent and no results achieved. On April 4, 1910, mastoidectomy was performed for intercurrent symptoms.

Group II. Chronic middle ear suppuration without bone lesions.

Case VII. Duration of disease over two years, the discharge coming on and stopping at varying intervals. The otorrhœa was very profuse and of a mucopurulent character. Upon agar a forty-eight hour growth showed *Bacillus pyocyaneus.* Vaccine strength 100 million to 1 c.c. March 19, 1910, ½ c.c. was injected into right shoulder. A sharp reaction was noted, the patient complaining of being quite sick. March 22, 1910, improvement noted in condition of diseased ear. Again injected on March 22, 1910, with 1.2 c.c. March 24, 1910, ear dry.

Case VIII. Duration of disease for some years. Discharge offensive in odor, and of mucopurulent character. A growth of *Bacillus pyocyaneus* obtained in twenty-four hours. Vaccine strength 25 millions to 1 c.c. Injection of 1 c.c. made on March 15, 1910, into right shoulder. March 19, 1910, a slight reaction was noted, but the ear condition was improved. A new vaccine was made (same microorganism) strength of which was 125 millions to 1 c.c. and injected March 22, 1910, into left shoulder. The ear was almost dry at this time, the patient stating that it was dry, but inspection showed some moisture.

This case is reported as improved, but not cured because the patient did not return for further treatment. I have no doubt another injection would have resulted in a cured ear.

Case IX. Duration of disease many years, although there had been periods during this time when ear had been dry for intervals. The otorrhœa was profuse, mucopurulent in character. A twenty-four hour growth on agar evidenced *Bacillus pyocyaneus.* Vaccine strength of this organism 25 millions to 1 c.c. March 12, 1910, injected 1 c.c. into right shoulder. March 14, 1910, patient complained of pain in shoulder, otherwise no reaction. Otorrhœa less in amount. Another vaccine made, growth of same organism being found, and injected 1 c.c. into right shoulder March 22, 1910. Again injected 1 c.c. into left shoulder March 24, 1910, the vaccine strength of these injections being 25 millions to 1c.c. No reaction reported. The otorrhœa appreciably less in amount, and on April 2, 1910, the ear was dry. Control examination May 21st and 24, 1910, and again June 10, 1910. The drum head was healed, and inflation of the tympanic cavity begun.

This case is noteworthy, since when first seen there was a large perforation present in the drum which completely healed during the period of observation.

Case X. Duration of disease five years, with dark gray, mucopurulent foul smelling otorrhœa. Upon agar a twenty-four hour growth of *Staphylococcus albus* was obtained. Vaccine strength, 5 millions to 1 c.c. March 11, 1910, 1 c.c. injected into right shoulder. No reaction noted. March 15, 1910, otorrhœa had ceased entirely. Control examination March 19, 1910, ear dry.

Group III. Acute otitis media purulenta, without elements of chronicity.

Case XI. Disease of one week's duration, pain fully subsided, temperature not elevated, discharge profuse, creamy and white. Growth on agar in forty-eight hours of *Staphylococcus albus.* Strength of vaccine 50 millions to 1 c.c. Injected 1 c.c. into right shoulder. From March 26, 1910, to March 29, 1910, ear was dry. There was no constitutional reaction noted. On April 12, 1910, patient was seen, and drum was moist. Another injection of 1 c.c. was made. Case is considered cured.

Case XII. Duration of disease four weeks. Otorrhœa of thick creamy character, profuse in amount. After thirty-six hours a growth of *Diplococcus catarrhalis* was obtained on agar. Strength of vaccine equalled 300 millions bacteria to 1 c.c. Injected March 19, 1910, with 1 c.c. No reaction noted. Discharge unchanged. March 24, 1910, again injected with 1 c.c. March 26, 1910, appreciable lessening of discharge. March 29, 1910, discharge almost absent. Control April 12, 1910, ear dry.

Case XIII. Disease of three weeks' duration, otorrhœa very profuse, purulent, thick, and creamy. Upon agar-agar after twenty hours, a growth of *Bacillus pyocyaneus* and *Staphylococcus aureus* was obtained. From this a vaccine, strength 10 millions bacteria to 1 c.c. was made, and injected May 12, 1910. There was no reaction, and on May 14, 1910, the ear was dry.

Case XIV. Duration of disease, three weeks. Paracentesis performed three weeks previous to undertaking vaccine therapy. At time of appearance at clinic, otorrhœa was profuse, and of yellowish color. A twenty hour growth on agar-agar gave pneumococcus, from which a vaccine was prepared, strength 10 million bacteria to 1 c.c. The case had been under the usual antiseptic cleansing treatment until this time, but all other treatment was stopped and on May 20, 1910, ½ c.c. of vaccine was injected into right shoulder. There was a slight constitutional reaction. The discharge had perceptibly lessened on May 25, 1910, when another 0.5 c.c. was injected although the ear on that day was dry. Case controlled on June 3d and 10th, and ear was found to be dry.

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[3] To be noted that the ear which became dry did not evidence bone necrosis, although discharge from both was equally purulent and equal in amount.

CONCLUSIONS.

The summary of the results obtained may be tabulated as follows:

Groups of cases.	Numbers.	Cures.	Improved.	No results.
Chronic suppurative with bone lesions..	6	0	1[1]	5
Chronic suppurative without bone lesions	5[2]	4	1	0
Acute middle ear suppuration..........	4	4	0	0

It is obviously impossible to draw final conclusions from so small a number of cases, but because they were selected to represent groups of middle ear suppurations, the results thus far obtained are worthy of note. The uniform failure to effect any results in the cases with bone lesions was logically to be expected. The study has, on the other hand, shown that autogenous vaccine therapy has a field of usefulness in otology in properly selected cases; that is, among such where the subsidence of bacterial activity means the end of the lesion. In acute cases, after the period of violent onset and its coexisting constitutional reaction has subsided, the added immunity acquired through vaccine therapy seems to rapidly cure the diseased ear.

Further report will be made.

In conclusion, I desire to express my indebtedness to Dr. Charles J. Imperatori, assistant surgeon, New York Nose, Throat, and Lung Hospital, for his valuable services both in the laboratory and in the clinic. In selecting the cases, seven were taken from Dr. Wendel C. Phillips's ear clinic at the Manhattan Eye and Ear Hospital and the remainder from my service at the New York Nose, Throat, and Lung Hospital.

616 MADISON AVENUE.

CARBOLIC ACID POISONING.

*With Report of a Case.**

By CHARLES B. BURKE, M. D.,
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There is no subject in the medical literature so lightly dealt with, or so seldom reported as cases of carbolic acid poisoning. I would venture to say that each one of you have seen a goodly number of cases during your practice, but have not reported a single one. This may be due to the fact that many of them are suicides and the persons are dead before medical aid reaches them, or it may be that death occurs so soon after the arrival of the physicians that very little, if any, data can be noted. At any rate there is no drug in our pharmacopœia that has claimed more victims and made more cripples than carbolic acid and yet we seldom see a report of a case. Dr. John J. Reese in his *Toxicology* says: "Poisoning is probably the most frequent of all the causes of violent death, war being excepted."

Have you noticed the number of cases reported in our daily newspapers? You can scarcely pick up a paper that does not contain an article headed "Mr. So and So Commited Suicide by Taking Carbolic Acid." How many reports of such cases have you seen in your medical journals during the past few years? You may ask why is this drug so commonly employed for the purpose of self destruction, and I shall submit the following reasons:

First: The ease with which it can be procured. Anybody—man, woman, or child—can walk into a drug store and buy carbolic acid without being questioned. I am told that you can buy it at the grocery store. It is true, the law on this subject says, "No person shall sell or retail any poisons enumerated in schedules 'A' and 'B' except in dispensing poisons in usual quantities or doses upon the prescription of a physician as follows: * *" A large number of poisons are enumerated but we will speak only of carbolic acid. "It shall not be sold unless the package containing such poison has placed thereon and also on the outside wrapper or cover, the name of the article, the word 'POISON' and the name and *place of business of the seller;* nor shall such poison be sold or delivered, unless upon inquiry it be found that the party receiving it is aware of its character and represents it to be used for the proper purposes; nor shall such poisons be sold or delivered without, before delivery of the same, causing an entry to be made in a book kept for that purpose of date of sale, the name and address of the purchaser, the name of the poison, the purpose for which it was represented to be required, and the name of the dispenser, which book shall be open to the inspection of the proper authorities and preserved for at least five years, the entry of each such sale to be signed by the dispenser."

How often do you imagine that these restrictions are carried out? While it is true that a great many of the victims are suffering from emotional insanity brought on by anger or jealousy, there are some who take it by mistake, and no small number suffer from its effects applied externally.

Professor R. Kohler reports the cases of two journeymen suffering from scabies who applied externally, each about a half ounce of carbolic acid in a watery solution. One of them was found dead. His fellow companion who suffered from unconsciousness and a drunken delirium ending in a quiet sleep, after his recovery, stated that directly after rubbing himself with the solution he had a giddiness, that seven minutes later his companion complained of burning, but what took place after that he knew nothing.

There is a case reported in the London *Medical Record* of October 15, 1887, of an infant that was severely burned following the use of carbolized cotton wool.

Dr. Graham tells me he attended a person who applied a solution of carbolic acid to his hands for the relief of itching due to ivy poisoning in which gangrene set in and the patient lost three fingers from one hand.

Second: Carbolic acid is generally known to kill rapidly and surely. If a lethal dose is swallowed by a man, he may drop dead from its effect, before he can go more than a few feet from the spot where he stood when he was drinking the drug. Here death may occur in a few minutes but the patient usually lives a few hours.

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[1] The right ear of Case III is counted in this group, the case being a double involvement.

[2] Case was reported improved, but patient did not again come for treatment.

*Read before the Cass County and Botna Valley Medical Societies, July 20, 1910.

Third: People who are despondent enough to meditate self destruction, are given ample suggestions from the frequent accounts of cases of carbolic acid poisoning recorded in our daily newspapers. If they are looking for a "means" the newspaper will at least suggest one very popular way of exit from this world of trouble and tribulation.

Fourth: It is a part of our early education to know that carbolic acid is a poison and that it will kill us if we drink it, and burn us if we touch it, for there is no drug so commonly employed as a general household disinfectant for the destruction of cockroaches and bedbugs as carbolic acid. A druggist told me that the sale of carbolic acid for disinfectant purposes was enormous; that not only was it used to disinfect homes but it was also used for that purpose in general stores, billiard halls, clothing stores, etc. What is the result? When we reach maturity, we have it implanted in our minds that this drug will kill us if we so desire.

The diagnosis of carbolic acid poisoning during life ought, in most cases, to be an easy matter, but such cases as I am about to report are very misleading and require some thought and the use of chemical tests applied to the urine or stomach contents to arrive at a proper conclusion. Every authority that I have been able to consult says that you can smell the odor of the drug about the person of the victim, and close examination of the mouth will nearly always reveal traces of a local action of the acid in the form of white, hardened, or corrugated patches of mucous membrane.

This patient has neither the odor or the escharotic patches about the mouth. The urine, the authors say, is a dark golden yellow when passed and turns to a dark olive green when exposed to the air, but they do not say how long an exposure to the air is necessary to bring about this change in the color. In this case, the urine was drawn by catheter at eleven o'clock p. m. and did not show any change in color until nine a. m. the following morning, and the reaction was not complete until three p. m. that same day, so you see if the reaction always requires this length of time, how useless this change in color would be as a diagnostic sign. Then again, this dark smoky or greenish color found in cases of carbolic acid poisoning is the result of decomposition of products of phenol (hydroquinone), but other products as the pigments of blood, bile, and melanin will produce the same color. It may also be caused by salol, coal tar products, resorcin, etc. This color reaction is, however, important where the drug is employed locally and is a good indication for its discontinuance for it shows the patient is getting the toxic action.

Baumann and Heuter (in Fritsche's *Physiological Chemistry*) declare that the earliest symptoms of carbolic acid poisoning are the diminution or total absence of the ordinary sulphates from the urine (the conjugate sulphates are increased).

The presence or absence of sulphates in the urine is detected by the removal of the albumin, which is usually present in those cases, by boiling, then acidifying with acetic acid, and adding barium chloride in excess. The reagent gives a milky cloud of sulphates or barium in the presence of sulphates, but a mere haze or no alteration in carbolic acid poisoning. This test used with the tests for carbolic acid in the urine such as the ferric chloride or nitric acid, and potassium hydroxide are the very best means of making a positive diagnosis in cases of poisoning by carbolic acid. A few remarks about making these tests:

Carbolic acid when it is passed in the urine is in combination with the sulphates, so that neither the sulphuric or the phenol radical will respond to the tests; but the natural quantities of sulphates again appear if the urine is boiled with hydrochloric acid. It is useless to make the ferric chloride test unless this caution is noted. It is also well to remember that an excess of hydrochloric acid will also interfere with the tests. Carbolic acid just added to passed urine will not give the tests. The reaction that takes place when ferric chloride is added to urine containing carbolic acid treated as described will give a permanent violet blue color. Another point to be noted is that hydrochloric acid in excess, acetic acid or alcohol will destroy the tests for carbolic acid in stomach contents. It will be noted that the last two are antidotes and apt to have been used before stomach contents have been obtained for examination.

TREATMENT.

The best antidote is a cupful of alcohol and water (four ounces of each) given by mouth and removed at once with stomach tube, if possible, syphoning it out. If the stomach tube cannot be used, give apomorphine hydrochloride, 1/10 grain, hypodermically. (Omit evacuate treatment if corrosion is severe and limit the total quantity of alcohol to four ounces well diluted.) The alcohol protects the stomach from the corrosive action of the carbolic acid probably by its dilution of the carbolic acid, its effects upon the walls of the stomach delaying or preventing absorption. It also acts as a stimulant. Apomorphine not only has a prompt emetic effect upon the more or less paralyzed stomach, but also controls any inclination to acute alcoholism. (Owing to the anæsthetic condition of the mucous membrane of the stomach, emetics are, as a rule, not very effective.) If alcohol cannot be procured, use a cupful of clear whiskey, brandy, gin, cider vinegar, or rum for the alcohol they contain.

The administration of the alcoholic preparations followed by evacuation of the stomach should be repeated every five or ten minutes, from four to eight times, according to the severity of the poisoning. Washing out freely with much water is also good secondary treatment. In the absence of alcohol, a very dilute acetic acid has been employed. Owing to their albuminous nature, milk or white of eggs may be used with benefit.

The next step is to administer some of the soluble sulphates, such as sodium or magnesium sulphate (in from one half to two ounce doses in a cupful of water) to hasten the elimination of such portions of the carbolic acid as may have entered the circulation. Half a pint of such a solution, of one fourth the before mentioned strength, should be left in the stomach for continued absorption.

Stimulate the heart, circulation, and respiration by atropine sulphate (from 1/100 to 1/60 grain) and inhalations of amyl nitrate (from 3 to 5 drops) crushed in a handkerchief. Hypodermic injections of sulphuric ether may be employed. Strychnine or digitalis may be helpful. Artificial respiration is often required. Body temperature should be maintained by placing hot water bottles around the patient. Give demulcents as an after treatment to soothe and protect the mucous membrane. The best of these seem to be milk and eggs, and they not only soothe but nourish and sustain the patient. Also apply mustard paste to the abdomen and employ friction and faradism to the extremities.

Opium or its derivatives may be given to relieve pain and nervous irritability if present and severe. I wish to call to your attention the erroneous suggestions offered by a great many textbooks as to the giving of oils and glycerin. It seems to me that they are about the worst thing that can be given for they favor the solution and absorption of the poison (Brundage). Remember that carbolic acid, although so called, is not an acid, but belongs to the class of bodies known as phenols, and has but feeble acid properties.

REPORT.

CASE. Sunday evening, June the 19th, about nine o'clock I was called to see a man aged seventy-three years, who was said to have become overheated while cutting some oats for his cow. I found him sitting in an arm chair on his lawn in front of his house, supported in the upright position by two relatives. He was tossing backward and forward, muttering and groaning, evidently suffering intense pain. His respiration was noisy, labored, and rapid; rate about 60 with loud mucous râles from the greatly increased secretion of mucus in nose, throat, and mouth. His radial pulse was imperceptible; pallor was marked. He was in a comatose state from which he could be partially roused by deep pressure over the supraorbital nerves. He was covered by a profuse cold, clammy sweat which rendered his clothing soaking wet. His pupils were contracted and did not react to light. After this hurried examination, he was given a hypodermic injection of 1/8 grain morphine sulphate with 1/50 grain atropine sulphate. After a few minutes he was given four hypodermics of whiskey (15 minims each).

His clothing was so wet and sticky it had to be removed by cutting it off. We then put him to bed and wrapped him in warm blankets, and put hot water bottles around his body and applied brisk friction to his extremities, for he felt like a corpse (cold and clammy). His wife was then questioned. In answer to an inquiry, as to his past illness, she said: "It is not an uncommon thing for him to have spells like this, but I do not think he was ever so bad as he is this time. It's his heart. He frequently has severe pain over his heart and in his left shoulder. Sometimes it is so bad that I have to put on a mustard plaster to relieve him." She stated his doctor had told him he had hardening of the arteries of the heart, and if he was not careful, he would drop dead some day. She also remarked that last Friday (three days previous to this attack) he had a sunstroke, and had to be carried home from work. On inquiry I found this statement to be true and that his condition then looked very similar to his present state. I asked her to describe his actions before my arrival, and she replied: "He went out and cut some oats for the cow, and when he returned, I asked him if he wanted his supper, and he replied that he was too hot to eat, but he drank four or five glasses of clabber, and ate some cake, and then went out and laid on the lawn in front of the house." A short time after this, he called her and said: "Mamma, I'm dying. My heart pains me so; goodby. I'm gone. I am a free man." She said a little later he became delirious and talked about an old mare they used to own named "Bessie." A little later he started to mutter, and she could not tell what he was saying.

It was nearly ten o'clock p. m. and I was still laboring under the impression that the patient was suffering from heat exhaustion. After his body heat returned somewhat, I continued the examination. It was useless to try to listen to his heart tones as he was groaning and muttering and his lungs were filled with loud cracking, mucous râles. The sclera of his eyes were injected and jaundiced. His deep reflexes were abolished. There was no Babinski sign which, as you all know, is an early sign in cerebral hæmorrhage. There was no ankle clonus. At this time he was partially aroused by deep pressure over the supraorbital nerves; that is, we could make him frown and raise his arms as if to protect himself. The temperature then was 97° F. per rectum. He was now given four more hypodermic injections of whiskey. In holding the light near his face, to examine his mouth, I saw that he had a bruise over his left superior maxillary bone but was told he did that while rolling on the lawn. They said he hit his face on the sidewalk. I afterward found this statement to be false.

It may be well to say that they were celebrating his birthday that afternoon and that the patient had taken a goodly quantity of whiskey and alcohol in honor of the event. It may also be said that this was the third and successful attempt to commit suicide. Twice before he tried hanging but some solicitious friend always came along and cut him down.

Now, this information was all developed after the patient was dead. At eleven o'clock p. m. the temperature in the axilla was 99° F. Respirations became like in a person in very deep anæsthesia; that is, his jaws had to be held forward in order to prevent retraction of the tongue, his breathing was diaphragmatic and shallow; in fact, unless his jaws were held extremely forward, enough so as to cause him pain, he would stop breathing entirely.

At this time I was called out by one of his relatives and informed that an empty, one ounce bottle labeled "carbolic acid" was found near where he was lying when he first took sick. It is to be remembered that this was four hours after he told his wife he was dying or four hours after he had taken the drug. I then went to the office and called Dr. Porterfield in consultation; I also called a trained nurse.

We went back and again examined his mouth and lips with negative results. It is true we had nothing but an old lamp whose chimney bore the smoke of many battles, to make these examinations, but I do not think there is a doctor here who would make a diagnosis of carbolic acid poisoning on the evidence we found. There was no odor of the drug on his breath or person. However, we gave him a cupful of whiskey through a nasal catheter (about four ounces). We then catheterized him; gave him again 1/50 grain atropine sulphate and turned him over to the nurse with instructions as to his breathing and body temperature, etc. We then came back to the office and examined his urine which gave the reaction of carbolic acid. This was about 1:30 a. m. About four o'clock a. m. the nurse took his temperature and found it was 108° F. in the axilla. Respiration was much improved; in fact, he breathed fairly normal with the exception of the noise he made on account of the mucus in his throat. Pulse, 140. At six o'clock a. m. I was again called and at this time his temperature was 109° F. in the axilla, but respirations were twenty-four and he seemed to get his breath with more ease. He was now covered with sheets wrung out of ice water; his head was packed in ice and a high colon tube inserted and cold water allowed to flow in and out of the rectum continuously. At seven o'clock a. m. the temperature was 107° F. All this time his radial pulse was imperceptible, but the pulse was counted over carotids and found to be 134. At eight a. m. the temperature was 102° F.; pulse, 110; and the patient seemed in good condition; cold bath and tube stopped. At nine a. m. breathing became irregular; pulse, 140; temperature, 99.4° F. He was now given 1/100 grain of atropine; and at 10:20 the nurse telephoned that he had passed away.

Post mortem examination: Sex, male. Age, seventy-three. Body length, five feet seven inches. Development of skeleton, slender but powerful. General nutrition, good. General condition of the skin, elastic and close fitting. Post mortem discoloration, hypostasis of blood, post mortem lividity. Post mortem rigidity was marked in neck, arms, and legs.

Eyes, icteric, injected, arcus senilis marked in both eyes. Pupils contracted. Ecchymosis and swelling over superior maxillary bone on left side. Thorax, symmetrical, no marks. Abdomen, slightly distended. Genitals and extremities, normal.

Abdominal cavity contained 20 c.c. of a dark brown fluid. The liver, intestines, and peritonæum were all adherent. The intestines were filled with hard caked fæces. The stomach and liver were adherent. The liver was congested, and the stomach was enlarged. The appendix was one inch long and about the size of a match. Bladder was normal. The kidneys were large red kidneys; cut freely, capsule peeled off readily. They were deeply injected and evidently congested. The spleen was enlarged. The intestines were bound together by firm adhesions. The pleural cavity contained light straw colored fluid. The lungs showed a marked anthracosis. The remarkable thing about this post mortem was an exostosis from the second to the fourth rib on a level with the anterior axillary line on the left side. The longest point measured two and one half inches which may have produced the pain mentioned by wife. The lungs both floated. The heart was hypertrophied; in fact, it was an athletic heart, or cor bovinum. The œsophagus showed the evidence of the escharotic action of the acid. The lesser curvature and cardiac end of the stomach were a bluish purple color, and the mucous membrane was peeled off and rolled up. The action of the acid was deep, for the cardiac end of stomach was nearly perforated. We found the carbolic acid in the stomach contents.

REPORT OF FIFTEEN CASES OF *HYMENOLEPIS NANA.*

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Since Stiles in 1903 predicted that *Hymenolepis nana,* or dwarf tapeworm, would be found to be a common parasite in the United States, few cases have been reported until recently. Deaderich, in 1909, reported two cases and collected the thirty-one other cases reported in the United States to that date. The *Index Medicus* from 1908 to the last number before the writing of this article, May, 1910, contains no reference to cases reported in this country. Schloss recently reported twenty cases in children in New York, and there may be other cases reported which have not yet appeared in the *Index Medicus.* We report these cases to further emphasize the fact that infection with this parasite is common in the southern States which bears out Stiles's prediction.

Five of our cases were found while making a routine examination of the stools of three hundred and fifteen students of Tulane University. Two of these patients, who had very few eggs in their stools, had never had noticeable symptoms; the other three had had severe symptoms several years previous. Two had had convulsions from three to five years ago, and at the time the eggs were found still had mild symptoms.

Eight of our fifteen cases were found while making a routine examination of the stools of one hundred and thirty inmates of the Jewish Orphans' Home. Two of the children are said to have had convulsions and two others are small for their ages. No definite symptoms traceable to the infection were recorded in the other four of these cases.

Two of the fifteen cases were found during the routine examination of one hundred and thirty-two specimens of fæces from private patients during the past twelve months. One, a young man, twenty-six years old, had consulted many physicians during the past six years for various digestive and nervous troubles. Among the diagnoses made were gastritis, appendicitis, nervous prostration, neurasthenia, melancholia, and epilepsy (though no definite convulsions had occurred). The other patient had suffered from melancholia and night terrors, but nothing definitely indicating intestinal parasites. She presented herself for examination for hookworm disease. The blood showed nothing of note in these cases. The hæmoglobin was from 80 to 95, the eosinophiles were from 1.4 to 8.5 per cent.

Out of a total of five hundred and seventy-seven stools examined, three cases of *Tænia saginata* were found, which would indicate that *Hymenolepis nana* is by far the commonest tapeworm, in this part of the country.

It should be mentioned that most of these cases were diagnosticated by examining centrifuged specimens of fæces and would have been missed if only the ordinary technique for examining fæces had been followed. This serves to indicate additional value of the proper use of the centrifuge in examining fæces as described by one of us in the diagnosis of hookworm infection.

We wish to emphasize a point mentioned by Stiles and which, it seems to us, has been rather neglected by others. After an anthelmintic the worms are often broken up into small fragments and are not visible to the naked eye. It often happens that a careful search fails to reveal the presence of a single worm and one might be led to believe the antihelminthic had not been effective; however, microscopical examination of the mucus will usually show fragments of many worms.

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THE INTIMATE RELATION WHICH HOSPITALS BEAR TO PUBLIC HEALTH.

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Medical officers of the service who have had considerable experience in hospital and in public health duty have recognized the fact that there is a close relation between the hospital and public health, and that as the hospital idea in the care of the sick is becoming more and more the adopted plan of treatment, the general municipal hospitals or other general hospitals become a more important factor in problems of public health and preventive medicine. If the health authorities of the cities would keep in close touch with all general hospitals, much could be learned that would be extremely useful to them in their public health work. This is now in a measure the practice in most cities with reference to the reporting of contagious diseases, but there are many diseases which are not reported that should be, and which if the health authorities were informed of the place where all hospital cases originated it would be of assistance to them in reducing the mortality rate. Take pneumonia as an illustration, the disease which with one exception causes the greatest number of deaths. It is well known that it is infectious and also that it at times becomes epidemic in certain districts or localities. That several members of one family are frequently attacked at the same time; that it is likely to occur where there is crowding in dwelling houses or where the sanitary condition of the dwelling house is bad. Pneumonia may and does occur sometimes under what we believe to be the best sanitary conditions as the exact cause of the frequency at times of this disease is unknown, but a knowledge of the places where the disease originates I believe would, if properly used, be of great assistance in reducing the number of such cases.

The intimate relation of the hospital to public health is perhaps more frequently shown in the United States Marine Hospitals than in any other class of hospital. This is necessarily true by reason of the vocation of the patients admitted to the hospitals. Their frequent visits to foreign ports where they are exposed to tropical or other contagious diseases, and are free from restraint and to the conditions surrounding the life of a sailor.

At the large seaports where vessels arrive from nearly every country in the world, the sailors who are sick or injured are sent direct to the United States Marine Hospital, and frequently patients suffering from tropical or contagious diseases are first seen or recognized at these hospitals. The history of the service recorded in the annual reports and in other publications show this statement to be true.

Cases of measles, typhoid fever, tuberculosis, diphtheria, pneumonia, scarlet fever, etc., usually not classed as quarantinable diseases, when admitted to the hospital and it is believed they have contracted their disease before they left their vessels, are reported to the quarantine officer that the vessel may be disinfected. I recall many instances where several cases of tuberculosis developed in the forecastle of small vessels, and also where diphtheria and measles followed vessels which undoubtedly were infected. These cases were reported to the quarantine officer who had the vessels disinfected. When typhoid fever was prevalent among the sailors a few years ago upon the great lakes vessels, I found after an investigation that the water supply of the vessels was frequently taken in the harbors. This was of course not only a menace to the officers and crews but to the traveling public. Work of this character is frequently required of the medical officers at the hospital. The attention of the vessel owners was called to the unsanitary method and it was corrected.

Sailors suffering from tuberculosis who apply for relief at the hospital are sent to the United States Sanatorium at Fort Stanton where they often make complete recovery.

An important work in preventive medicine carried on by these hospitals is the removing to hospital for treatment sailors suffering from venereal diseases and tuberculosis. It is hardly necessary to point out the danger to the public of having persons suffering from such diseases employed as cooks, waiters, stewards, laundrymen, etc., aboard a vessel. Many cooks and waiters are held in these hospitals for treatment suffering from tuberculosis and syphilis. This of course is but one factor in the eradication of such diseases, but it has very much to do with preventing their further spread.

Except the class of immigrants who come in the steerage to this country in such great numbers, it is believed that diseases not indigenous to this country are more likely to be brought here by the sailor than in any other manner, and when an American sailor escapes the vigilance of the quarantine officer, or should his disease develop after he has passed quarantine, he usually turns up at the United States Marine Hospital where a proper disposition is made of the case and the public is protected.

To show the frequency and variety of contagious or infectious diseases among sailors, I submit the following partial list of such cases which were admitted for treatment at United States Marine Hospitals during the year of 1907: Smallpox, 27; chickenpox, 11; measles, 67; scarlet fever, 6; relapsing fever, 1; plague, 1; dengue, 13; influenza, 1,940; mumps, 55; diphtheria, 38; typhoid fever, 589; choleraic diarrhœa, 5; epidemic diarrhœa, 22; dysentery (amœbic included), 171; beriberi, 18; malarial fevers, 2,147; erysipelas, 58; pyæmia, 4; septichæmia, 13; tuberculosis, 913; leprosy, 2; syphilis, 4,342; gonorrhœa, 5,181; diseases dependent on animal parasites, 518; diseases dependent on vegetable parasites, 66; scurvy, 6; conjunctivitis (including trachoma), 464; pneumonia, 258.

Some venereal cases are treated at the hospital dispensary, but all patients considered by the examining officer proper cases for hospital treatment or which ought not to be employed aboard a vessel are given hospital treatment until they recover. The benefit to the public and to commerce of the prompt recognition, isolation, and care of these classes of patients cannot be overestimated.

The conditions of life of a sailor are exposure to severe weather, to tropical and other infectious or contagious diseases, long periods of isolation, no home influences, severe work in the stoke hold, crowding of the forecastle, bad food, and small pay.

The government at an early date recognized that the sailor is essentially a very important factor in the commerce of the nation, material to its defense in time of war, and made laws providing for his protection aboard ship and ashore, and care for him when sick. In this care and protection of American seamen I believe the public health is in large measure protected.

To illustrate the character of the work performed at one of the United States Marine Hospitals, and show its relation to public health or preventive medicine, I cannot do better than give a brief extract from my report as commanding officer at the United

States Marine Hospital, San Francisco, for the year ended June 30, 1909—:

Number of patients treated in hospital during the year, 1,378. Daily average number of patients in hospital for the year, 143. Total number of treatments furnished outpatients, 2,665. Total number of surgical operations performed during the year requiring anæsthetic, 198.

Total number of cases of fractured bones including skull and pelvis, including many compound and comminuted fractures with multiple injuries due to falls from the rigging and into the holds of vessels, 86.

Total cases of severe burns and scalds, 10.

The following partial list of medical cases is also noted: Tuberculosis, 86; enteric fever, 32; amœbic dysentery, 34; malarial fever, 15; carcinoma, 5; trachoma, 34; bronchitis, 37; pneumonia, 12; pleurisy, 13; acute gastritis, 23; enteritis, 16; Bright's disease, 10.

The routine work in the hospital laboratory required in a large hospital of this character occupies much time of the medical officers and internes.

A systematic examination of the blood, urine, stools, sputum, stomach contents, and pathological specimens in all cases where such examinations are useful in the diagnosis and treatment of cases is made, and a permanent record of the same is filed with the history of the patient.

Total number of laboratory examinations made was, 3,990.

Blood examinations, corpuscle counting and hæmoglobin determinations, examinations for parasites, anæmias, Widal reactions, etc., 434.

Stomach contents examined, 12. Necropsies, 16. Specimens of urine examined, 1,497. Specimens of sputum examined, 387. Specimens of fæces examined, 1,430. Pathological specimens, including diphtheria slides, tissues, etc., 304.

The new coil x ray apparatus which was installed in the hospital the latter part of the year is in daily use and is a valuable adjunct to the hospital equipment. All skiagraphs are filed with the permanent records of the hospital and an index made for reference.

Three complete water analyses of the spring and lake water used at this hospital and of the wtaer of Lobos Creek have been made by the officers of this hospital and a report of the analysis will soon be sent to the Bureau.

A noteworthy feature of the statistical report is the large number of cases of amœbic dysentery admitted to the hospital.

A thorough and careful examination was made in each case and no case was recorded as amœbiasis until living motile amœbæ were found in the stools on several different days, and unless the patient had the clinical symptoms of the disease. In one case in which I operated for appendicitis, amœbæ were found in the ulcerated appendix and in several cases with liver abscess, the motile amœbæ were found in the abscess. A careful investigation of the antecedents in each case was made, and it was found that of the forty-eight patients suffering with amœbiasis fifteen had undoubtedly contracted the disease on the Pacific coast of the United States. I fully concur in the opinion of Passed Assistant Surgeon Long, who has had much experience in public health work in the Philippines, that the disease is spread here by the eating of fresh vegetables raised by Chinese truckmen, who fertilize the plants with human fæces, as they do in China and other Oriental countries. I have had the matter brought to the attention of the health authorities, and it is hoped that they will find authority to exercise some supervision over the gardens where vegetables are raised for the market. The usual treatment in these cases has been, first, large doses of ipecacuanha given in salol coated capsules, later high enemata of 1 in 1,000 quinine solution. Appendicostomy was performed in a few cases last year, but in the majority of cases this operation is not found to be essential to successful treatment. I believe that the amœbæ is the ætiological factor in this form of dysentery, although there are many physicians who are still skeptical. The amœbæ has been demonstrated by one of the staff of this hospital, in several recent dysentery cases occurring in this city, in the practice of private physicians, and a number of physicians interested in public health have visited the hospital to see cases of the disease.

The relation of this hospital to the public health of San Francisco and other cities on this coast is most intimate. In a great seaport city like San Francisco, where vessels arrive often from nearly every country in the world, unusual diseases are likely to be first seen among the officers and crews of vessels of the merchant marine, the army transport vessels, and the United States revenue cutters. If they are sick upon arrival, or are taken sick some time after, they apply to the hospital for relief.

The first two cases of plague in San Francisco which were recognized and reported were patients in the United States Marine Hospital. Immediate investigation of the antecedents of these patients was made from the hospital and reported to the United States Quarantine Station and to the city health authorities, when the Board of Health disinfected the places where the patients took their meals and other places in the city which it was found they had frequented. They also commenced the destruction of rats in the neighborhood of these places and found many that were infected. The active cooperation of the medical officers at this hospital by request of the city authorities in the preventive measures taken at the commencement of the outbreak of plague before the government assumed control of these measures, is in part a matter of official record.

The officers stationed at this hospital keep in close touch with the health authorities, and special care is taken to show all physicians who visit the hospital, and there are many who do so, all cases which may be of special interest.

In the erection of the new permanent hospital buildings at this station, I have to recommend that a separate laboratory building be built for hospital and public health work. A large, well equipped laboratory is needed here, and I know of no better field in the United States for the study of certain tropical diseases, than can be found in connection with this hospital.

In making stool examinations other parasites were almost invariably found in stools containing amœbæ, the most common parasite being *Trichomonas intestinalis.*

Many stools not containing amœbæ were found to contain parasites of various kinds. The following parasites or their ova were found during the year, sometimes singly, sometimes in company with others:

Amœbæ (*Entamœba histolytica*); *Trichomonas intestinalis; Megastoma entericum; Anguillula stercoralis* (Strangyloides); *Trichiuris trichiura* (Tricocephalus); *Ascaris lumbricoides; Uncinaria americana; Tænia saginata; Dibothryocephalus latus; Oxyuris vermicularis.*

Amœbæ were demonstrated in the water from Lobos Creek on several occasions by cultural methods.

HYPOPITUITARISM.

By Earnest S. Cross, A. B., M. D.,
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Medical Director and Physician to the Telfair Hospital.

Reports of pituitary gland disease[1] [2] are of increasing frequency in the literature, and it is possible to distinguish among them two distinct group of symptoms, one including those familiar as the result of increased intracranial pressure and the other comprising various alterations of growth and metabolism. For twenty years perhaps there has existed the idea that certain growth anomalies are connected with pituitary gland disease,[3] but the relation has remained obscure in view of apparently conflicting anatomical findings. The connection seems, now, however, to be in a fair way to become clear, and this is particularly due to recent work which recognizes the pituitary as a secreting gland subject to functional overactivity or underactivity analogously to the conditions possible in other ductless glands notably the thyreoid and parathyreoids.

In this work Cushing[4] has reviewed the embryo-logical basis of the anatomical structure of the gland, which consists of an anterior lobe of epithelial origin and a posterior lobe of combined epithelial and neural origin. It would seem that total removal of the normal hypophysis is not compatible with continuance of life. The work of various investigators goes to show that the product of the posterior lobe possesses diuretic and blood pressure raising properties, but that its removal results in very little bodily disturbance. The removal of the anterior lobe, however, in experiments upon animals is followed by definite alteration in the structure and function of various parts of the body so that this portion of the gland "seems primarily to be associated with the growth of the body, with the metabolism of fat, with sexual activities, and to be bound up in ways which yet are symptomatically obscure with the function of probably all the other ductless glands of the body." (Cushing.) Although as yet experimental knowledge of anterior lobe secretion and its properties is lacking the existence of such may be conceived, and further the possibility of oversecretion and undersecretion follows from our knowledge of the physiology of the thyreoid and parathyreoid glands.

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[1] Church, A. Pituitary Tumor in Its Surgical Relations. *Journal of the American Medical Association*, July 10, 1909.

[2] Hecht, D'Orsay. A Teratoma of the Hypophysis Cerebri. *Ibidem*, September 25, 1909.

[3] Van Gehuchten. *Anatomie du système nerveux de l'homme.*

[4] Cushing. The Hypophysis Cerebri. *Journal of the American Medical Association*, July 22, 1909.

Application of the conception gives ground for the theory that the influence of excessive secretion of the anterior lobe begun in fœtal or early life results in gigantism, the enlargement of bone being possible linearly as well as diametrically in the period before complete ossification. After this period, however, only circumferential increase in the size of the skeletal bones is possible to any extent and hypophyseal oversecretion results in the changes of acromegaly.

On the other hand defective secretion continuing from an early period of life may be considered the cause of a peculiar lack of physical development accompanied by adiposity and known as dystrophia adiposogenitalis. Conditions of undersecretion developing later in life apparently give rise to certain varying clinical pictures of adiposity and genital dystrophy. Cases of hypophyseal disease showing these latter symptoms Marburg[5] throws into three groups, 1, simple adiposity; 2, adiposity with genital atrophy; 3, simple atrophy. This classification overlooks the general infantilism so prominent in the condition we have called dystrophia adiposogenitalis so that it is perhaps justifiable to refer Marburg's divisions to cases of hypopituitarism developing in adult life.

The following case is cited as an example of hypopituitarism of the type of dystrophia adiposogenitalis.

CASE. P. Y., female, aged twenty-two, admitted July 1, 1909, complaining of "poor circulation."

Family history. Mother died at thirty, cause unknown, said to have suffered much from sick headaches. Father died of pneumonia. One brother died at five days. One normal sister.

Past history. Patient was a premature child. Mother was very nervous before child's birth and nearly miscarried in earlier months of pregnancy. Fat and well as an infant. Whooping cough at thirteen years, otherwise well as a child. Growth, however, was slow, the anterior fontanelle remaining open until the age of sixteen, at about which time also, second dentition took place. Menstruation was never established. Patient was always bright and cheerful in disposition and active in movements. Always preferred the society of children. General health excellent. Used glasses for about a year for the correction of apparent myopia.

Physical examination. Patient looked well and was of good color. Much adipose tissue everywhere, the breasts in particular being very large. The height was 128 cm. (50⅜ inches), hair of scalp soft, fine, and abundant. Complete absence of hair in pubic and axillary regions. Examination of ears was negative except well marked Darwin's tubercles. Cranium normal in shape, sutures and fontanelles closed. No bosses. Pupils about normal in size, equal, react normally. No hemianopsia or restriction in the fields of vision. Slight myopia apparent. Teeth infantile in type and widely spaced in places and crowded in others. Two supernumerary canines. Tongue normal. Chest well formed, no beading of ribs. Examination of heart negative except soft sytolic blow over body of heart not transmitted to axilla. Lungs and spine were normal. Abdominal examination was negative. Extremities. No bowing. No exostoses or enlargement of ends of long bones. Tendon and plantar reflexes normal. Anterior superior spine to external malleolus measured 68 cm. Intelligence. Beyond some immaturity mentality was normal. Pelvic examination. Pelvic organs and external genitalia infantile. Cervix uteri patent. Depth of uterus 2.5 in. Ovaries not felt but examination difficult.

Summary. The salient points of the case are therefore, normal mentality, small stature, striking adiposity, hypotrichosis, amenorrhœa, and infantile genitalia.

Assuming that insufficiency of the anterior lobe of the hypophysis is responsible for the syndrome, a skiagram (for which I am indebted to Dr. E. R. Corson) was made to determine, if possible, the anatomical condition in the region of the pituitary body and it shows a sella turcica certainly not enlarged and perhaps even of relatively small size. There is no evidence of tumor in the sella and it is impossible to conceive of any pressure thereabout sufficient to destroy the functioning power of the gland which would not also have resulted in severe headaches and choked discs. The cause of the insufficiency and the question of its anatomical and physiological basis remains a matter of speculation.

Differential diagnosis. There are certain conditions with which such cases as the one described might be confounded.

By certain authors[6] infantilism[7] has been described in connection with the thyreoid gland as perhaps a manifestation of insufficiency though sharply differentiated from cretinism. The efficacy of thyreoid therapy in certain of these cases has afforded some support to the theory, but such results are explainable on other grounds as will be shown later. It is probable that these infantilism cases are more correctly to be referred to hypophyseal alteration.

At a glance cases of achondroplasia might be thought to resemble the one described, but differentiation is easy by noting that achondroplasiacs[8] present, 1, disproportionately short legs; 2, bowing of the extremities; 3, prominence of the points of muscular attachment on the long bones of the extremities particularly; 4, lumbar lordosis; 5, normal genitalia.

Cretinism in general should present no difficulty as the deficient mentality, dry skin, coarse, brittle hair, protruding tongue, and frequent umbilical hernia make up a picture quite unlike hypopituitarism. There are certain slighter cases, but even these show loose, flabby skin, prominent abdomen, and mental weakness.

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[5] Marburg. *Deutsche Zeitschrift für Nervenheilkunde*, December, 1908.

[6] Brissaud. Mentioned in Church and Peterson's *Nervous and Mental Disease*, 1908.

[7] Osler. Internal Secretions, *Transactions of the Congress of American Physicians and Surgeons*, 1897. Gives a brief account of infantilism and quotes Lamy's description.

[8] Fussell, McCombs, de Schweinitz, and Pancoast. *Journal of the American Medical Association*, November 13, 1909.

Rickets can be excluded by noting cranial malformation, including bosses as well as beaded ribs, sabre shins, enlargement of epiphyseal regions and changes in the bony pelvis.

Congenital lues. This is mentioned because certain cases exhibiting retardation of general development have been described, particularly by Fournier,[9] who called the condition infantilism. He emphasized the fact, however, that his subjects were thin, shrivelled, and atrophic in appearance. One may expect also to note definite luetic stigmata, as indeed Fournier mentions in his account.

Therapeutic considerations. The therapeutic indications in these hypopituitary cases is to supply what we believe to be the deficiency of the anterior hypophyseal lobe, and this might be done by feeding that structure as obtained from animals, in the fresh or dried state just as parathyreoids have been fed, or an extract of the lobe. As yet, however, it is not possible to obtain commercial preparations of the anterior lobe alone and since the effect of posterior lobe secretion has been harmful in some instances it does not seem advisable to make use of preparations of the whole gland.

There is a possibility, however, in the suggestion made before that there is some reciprocal relation between the ductless glands in general and in particular between the anterior lobe of the pituitary body and the thyreoid. Perhaps deficiency in one gland may be supplied by excess of secretion in the other or perhaps the presence of one may stimulate secretion in the other and so thyreoid feeding has been suggested based partly on the success seeming to attend those cases of so called "myœdematous infantilism."

In the cases of deficient secretion plainly due to mechanical interference such as a tumor affords, surgical intervention is of course indicated first, at least for the relief of any existing cranial supertension even if the function of the gland is not more or less restored. The question of gland therapy could then be considered. In operative measures Cushing's observation should be remembered, that symptoms of pressure may be due to tension in the dural pocket surrounding the gland, relieved by incision, a result which would not follow the ordinary cranial decompression.

A CASE OF HYPERCHLORHYDRIA APPARENTLY RELIEVED BY THE USE OF PRISMS.

By Christopher J. Astle, A. B., M. D.,
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This is a subject interesting both to the ophthalmologist and gastrologist. Several years ago Dr. Stevens, of New York, studied the conditions of migraine, neurasthenia, hysteria, epilepsy, and chorea with special regard to the part that a disturbance in the equilibrium of the eye muscles played as an ætiological factor, but I do not believe that he considered a condition of hyperchlorhydria; and as I have been unable to find any literature upon this subject, I believe this to be the first record of a case of its kind.

Case.—Ten months ago a man, twenty years of age, a porter by occupation, was admitted to the Roosevelt Hospital Outpatient Department. He gave the following history: Past history had been uneventful. Previous history was good. Present history: Duration, one year; cause, indiscretion; onset, gradual; course, continuous; primary symptoms, bowels constipated, headache, vomiting, and some eructation; present symptoms, belching of wind after eating, occasional pain, dizzy, bowels constipated, no vomiting, occasional nausea. Physical examination, No atony, stomach normal in size and condition.

The patient was now put on a series of test meals with the following results:

August 27th. Test breakfast, 45 minutes, well digested. Free acid, 32; total acid, 40; lactic acid, trace; starch reaction, brown.

August 29th. Test breakfast, 45 minutes, well digested; free acid, 36; total acid, 50; lactic acid, trace; starch reaction, brown.

September 1st. Regal, two and one half hours, well digested. Free acid, 52; total acid, 68; lactic acid, none; starch reaction, light brown.

September 3d. Regal, two and one half hours, well digested; free acid, 62; total acid, 82.

On September 3d, a diagnosis of constipation and hyperchlorhydria was made and the patient was given a tonic and milk of magnesia.

On November 21st, I obtained the following eye symptoms from the patient: He could not read for two minutes at night without getting sleepy and having to stop. He had headache every day. Eyes smarted and burned at night, and he saw flashes of light before the eyes, and these flashes were worse if the patient was constipated. Eyes were red and bloodshot in the morning. On examination both eyes were normal externally and both fundi were normal and field was normal: Vision, R—20/15. L—20/15. Under homatropine with the accommodation completely paralyzed: Vision, R—20/15. L—20/15. Refractive error +25S, but the patient would not accept the correction.

On January 23, 1909, I began a series of tests with the phorometer with the following result: RH. 1½°, Es 1°. EX 0°. Abd 5°. Was given 1° prism base down in the right for two days.

January 25th, with 1° prism base down in right patient showed with the phorometer: RH ½°, Es ½°, Abd 5-6°.

January 27th, with 1° prism base down in right phorometer showed RH 1°, Es ¾°, Abd 7°. Without prism before the right phorometer showed: RH 1¼°, Es ½°, Abd 6°. Patient was given 1½° prism base down in the right for two days.

January 29th. First time he had had no headache, having had none in the last two days. With 1½° prism base down in the right, phorometer showed: RH ½°, Es ½°, Abd 8°. Was told to continue the same glass for three days.

February 1st. With 1½° prism base down in the right phorometer showed: RH 1°, Es 1°, Abd 8°. Was given 2° base down in the right for four days.

February 5th. With 2° prism base down in the right phorometer showed: RH 1°, Es 1°, Abd 8°. Was given same glass for three days.

February 8th. With 2° prism base down in the right phorometer showed: RH ½°, Es 1°, Abd 8°. Was given the same glass for four days.

February 12th. With 2° prism base down in the right phorometer showed: RH ½°. Es 1½°. Abd 8°. Was given 2° base down in the right and ½° base out in the left to see if the esophoria was a factor in itself or one dependent upon the hyperphoria. The minute these two prisms were put on the patient said that the glasses did not feel right, but was told to wear them for four days, but on the third day he came back and said it was agony wearing the two prisms, and that he had had headaches every day and was sick at his stomach and had gas, which he had not had for some time; he felt weak and drowsy and worn out. He said the headache was over the left eye, the eye before which the ½° prism base out was placed, so he was again given the 2° prism base down before the right for four days.

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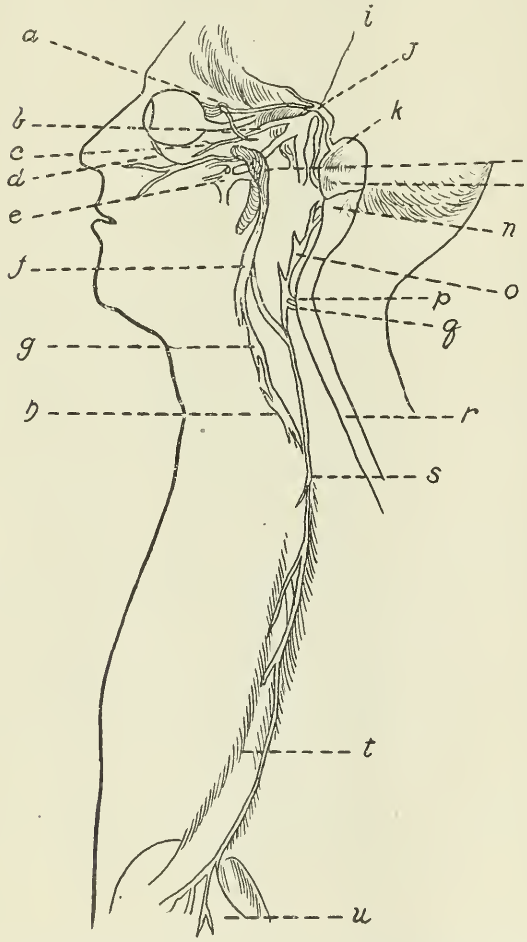
[9] Fournier. *Les Affections parasyphilitiques*, 1894.

February 19th. Patient said all the preceding symptoms had disappeared and that he felt fine again. With the 2° prism base down before the right phorometer showed: RH ¾°, Es 1°, Abd 8°. Was given 2½° prism base down in the right.

February 22d. With 2½° prism base down in the right phorometer showed: RH 0°, Es 1°, Abd 8°. The 2½° prism made the eyes water and he said that he had to walk with his head down, so was given 2° base down in the right for four days.

February 26th. With 2° prism base down in the right phorometer showed RH ½°, Es 1°, Abd 8°. At this time he was given as the final glass R 2° base down. L planeglass.

On March 29th I discussed my results with the gastrologists and we decided to give the patient another test meal.



a, Ophthalmic ganglion; *b*, first division of fifth nerve; *c*, second division of fifth nerve; *d*, infraorbital nerve; *e*, Meckel's ganglion; *f*, superior cervical ganglion; *g*, middle cervical ganglion; *h*, inferior cervical ganglion; *i*, first division of third nerve; *j*, first division of fifth nerve; *k*, nucleus of third nerve; *l*, carotid plexus; *m*, nucleus of fifth nerve; *n*, medulla oblongata of pneumogastric nerve; *o*, ganglion of the root; p, first cervical nerve; *q*, second cervical nerve; *r*, spinal cord; *s*, pneumogastric nerve; *t*, œsophagus; *u*, stomach.

April 6th. After wearing the prescribed glasses for six weeks a regal test meal was given with the following results: Regal, 2½ hours, well digested. Free acid, 33; total acid, 66; a drop of 30 in the free and a drop of 16 in the total acidity.

Another test meal was given on April 20th with the following results: Regal, 2½ hours, well digested. Free acid, 20; total acid, 65; a drop of 10 in the free acid.

As the gastrologists still doubted my theory and said that the drop in tests was due to the patient's improved condition from the tonic, disregarding the fact that the patient's improved condition did not begin until I commenced the tests with prisms, I decided as soon as possible to have the patient leave off the glasses but still keep up the tonic and the milk of magnesia, but at this time the patient was taken ill with amygdalitis and influenza and the case was discontinued for the time being.

From April 18th to May 1st, two weeks, the patient left off glasses but still kept up the tonic. Although he began to feel badly in two days, he kept up the treatment and on May 1st he was given a regal test meal with the following result: Regal 2½ hours, well digested. Free acid, 30, an increase of 10. Total acid, 70, an increase of 5. Now this all happened while keeping up the tonic which the gastrologists said was the cause of the previous drop in the amount of acid.

The patient again put on his glasses and left off the tonic for two weeks with the result that the amount of the acid again decreased. This happened while not taking the tonic. Thus I have clearly shown that this is a case of hyperchlorhydria relieved by correcting the hyperphoria, and not by tonics.

I do not mean to imply that all cases of hyperchlorhydria are due to hyperphoria, but it is one of the many reflex causes by which a marked change is brought in the amount of gastric secretion, and I think it is one of the first that should be examined for in all cases of neuroses.

I have attached a schematic diagram of the cerebrospinal and sympathetic nerve connections between the eye and the stomach. This drawing shows how easy it is for a nervous impulse to travel from the eye to the stomach and cause gastric disturbance.

I wish to thank Dr. Haffner for his careful examination of the stomach contents during my tests.

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LETTER FROM LONDON.

A Discussion on Vaccine Therapy.—Malingering and the Workmen's Compensation Law.—The Death of Dr. Lombe Atthill.

London, *September 28, 1910.*

A very important discussion has taken place at the Royal Society of Medicine on Vaccine Therapy. Sir Almroth E. Wright stated that the present trend of medical and scientific research work was to assign to bacteriology the foremost place in medicine. There was a time when the verdict of the pure clinician on a question of diagnosis was incontestable. That was when the disease could be recognized and identified only by its clinical symptoms. Diphtheria then meant a condition where a particular kind of false membrane appeared in the throat, typhoid fever, a fever where the temperature ran a particular course, and phthisis a disease in which certain noises could be heard down a stethoscope. With the discovery of the specific causes of these diseases came a quietus to all this.

Diphtheria now meant an invasion of the throat by the diphtheria bacilli, typhoid fever an invasion of the blood by the typhoid bacillus, and phthisis an invasion of the lungs by the tubercle bacillus. It was not at this hour of the day arguable that the verdict of a bacteriologist stood in need of confirmation from the clinician; in blunt language, the boot was on the other foot. Again, while it must be conceded that clinical methods did furnish in many cases a bacteriological diagnosis, this was reached only by a process of inference, and the chain of inference in this case was made up of a series of open links. As an illustration of this he mentioned that a reputable clinician recently assured him that it had never crossed his thoughts that dulness over the apex of the lung did not supply proof of tuberculous infection.

There was still a further important point. A diagnosis of the nature of a bacterial infection which was based upon the physical signs came short not only in the respect that it could never be wholly trustworthy, but also in the respect that it must always be belated, for physical signs such as could be appreciated by clinical methods could, in the nature of things, be elicited only after comparatively gross physical damage had been done.

The speaker then went on to allude to the custom of medical men sending specimens to bacteriologists for report. He considered that this form of delegation of work was to be deprecated. It was as though a man whose studies had not covered the whole of his professional work arranged to delegate to others that portion of the work which he had omitted to learn, while retaining for himself the responsibility for the whole along with the higher scale of reward which went with that responsibility. This case was not very clearly distinguishable from the case of a layman who would undertake to treat a case on condition of his being permitted to consult by correspondence competent medical authority whenever he might see occasion for doing so. This system of delegation of duties to the bacteriologist by the clinician worked badly in practice and was often perilous to the patient. Every worker in a laboratory could tell a tale of opportunities of diagnosis missed, of misdirected searches, and of quite incredible solecisms committed by distinguished clinicians whose qualifications dated back to prebacteriological days. It was probable that every worker in a laboratory had frequently been sent blood in a capillary tube with a request that it should be examined microscopically with a view to the detection of pathogenic microbes, or he had been sent a specimen of desiccated blood in a capsule with a request to examine for malaria parasites, or he had been asked to report on the opsonic index of a charred specimen of blood, or he had been shown a specimen showing phagocytosis and been asked by a high clinical authority to say which was the microbe and which the phagocyte. In fact, every bacteriological worker had been asked to place his services at the disposal of medical men who were in everything that appertained to bacteriology more uninstructed than the educated layman.

Dealing next with the limitations of vaccine therapy, he said that they were of two kinds—those urged by the clinician and those which the bacteriologist himself recognized. Only the latter need be seriously considered. One important limitation was that vaccine therapy could be applied only where an exact and complete bacteriological diagnosis had been made, and by those who had some acquaintance with bacteriology, some understanding of the rationale of vaccine therapy, and a knowledge of the dose of the particular vaccine which it was proposed to employ. Dealing with an objection to vaccine therapy because it was only of limited utility and applicable only in disorders produced by bacterial infections, he said that, while the world in general had progressed up to the point of accepting from the bacteriologist the fact that epidemic disease was due to bacterial infection, the medical profession in general had not yet accepted it from the bacteriologist that we had in practically every disease a bacterial infection or the result of a bacterial infection.

It was still comparatively unfamiliar matter that jaundice, bronchitis, common colds, asthma, infantile paralysis, and almost all cases of cardiac disease were due to microbial infection. As regarded the opsonic index, he stoutly upheld his original view that this was the only reliable method of estimating the progress of immunization and did not agree with those who considered it impracticable by virtue of its complicated technique and large margin of error.

The Workmen's Compensation Act in England is throwing a considerable amount of new work on the medical profession, and not the least of the important duties that fall to the lot of the medical man are those concerned with the detection of malingerers. The *British Medical Journal* has an interesting article this week on the methods of detecting malingerers. The temptation to malingering is unfortunately very great. Not only does a man receive benefit in the form of compensation from his employers, but if he belongs to a trade union or friendly society he gets in addition sick benefit. The constant drain on the friendly societies from this cause is having a serious effect. At a recent conference of the Manchester Unity the actuary expressed the view that mining lodges would never be in a solvent position unless they expunged the accident risk from their liabilities and confined themselves solely to the provision for sickness and death benefits. The pressure of accident claims was so severe that unless exceptional measures were taken the unity would be in a very serious position in the near future.

A good illustration is given of the detection of a malingerer by common sense methods by Dr. Morley. A man complained of complete loss of sight and was led about by his wife, limping along and making a truly piteous picture. To test his sight, he was asked to pick up a wax vesta from the floor. He groped about for some time all around it, but failed to find it. He was then told to dress, and meanwhile the doctor pushed a black safety pin he had been wearing off the table on to the black floor. He proceeded with his toilet and presently quite innocently stooped down and picked up the black pin from the dark floor without the least hesitation. The account of this incident at the trial was sufficient to convince the judge and the case terminated in judgment for the defendants.

The death is announced of Dr. Lombe Atthill, one of the best known medical men in Ireland. Dr. Atthill died suddenly in a railway station, from cardiac collapse. He was a graduate in arts and medicine from the University of Dublin and began his career as a country practitioner. He soon migrated to Dublin, however, and became resident master at the Rotunda Hospital. He became a Fellow of the Royal College of Physicians of Ireland in 1860 and successively filled the posts of registrar, censor, and examiner in midwifery to the college. He filled the presidential chair from 1888 to 1890, and was also its representative on the General Medical Council. He wrote a manual on diseases of women which ran through six editions in a few years, and contributed several papers to the medical journals.

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Therapeutical Notes.

The Treatment of Acute Laryngeal Dyspnœa in Children.—Barwell (*Lancet,* August 13, 1910) discusses the causation of the various forms of laryngeal obstruction in children and arranges the various conditions into groups. As to the treatment of spasm, this he observes may be considered under two heads, that of treatment during the paroxysm and that of preventive treatment between the attacks. The spasm of laryngismus stridulus is very short and sharp and there is little time to put the child into a hot bath and pour cold water on to the head, as has been recommended. The quickest and surest way to relieve the spasm is to hook the epiglottis forward with the finger, a manipulation which can easily be taught to the mother or nurse. The spasm also may cease on stimulating the conjunctiva by touching it with the finger or on tickling the nasal mucous membrane with a feather. The inhalation of amyl nitrite may be tried and can be quickly employed by means of breakable glass capsules. A fatal result is extremely rare.

In the preventive treatment overloading of the stomach must be carefully avoided, regular action of the bowels ensured, and all gastrointestinal irritation prevented, while a course of rhubarb and soda or magnesia is indicated; a change of air to a higher locality, or even to the top of the house, is very beneficial; and rickets, if present, must be treated. Adenoids are a powerful source of irritation and their removal in children predisposed to laryngismus is an essential part of the treatment. As a sedative, if the attacks are frequent and severe, small doses of bromide may be prescribed or, better, the fluid extract of grindelia in doses of ten minims in milk every three or four hours.

The spasm of laryngitis stridula is neither so acute nor so transient as that of laryngismus and can usually be allayed by the induction of vomiting. Ipecacuanha is the most useful emetic for the purpose, as its expectorant action is of value in the treatment of the accompanying laryngitis; drachm doses of the wine or five grains of the powdered root may be given every half hour to a child of two years of age until vomiting occurs. A combination of ipecacuanha and tartar emetic may act better than either drug alone, and Whitla recommends ten minims each of wine of antimony, wine of ipecac, and syrup of squill every fifteen minutes until vomiting occurs for a child one year old. When the spasms are severe amyl nitrite may be tried, or nitroglycerin, 1/500 grain every three hours, and sometimes belladonna is of value. For the rest, the treatment is that of the laryngitis, the child being kept in bed in a warm, well ventilated room and the ipecac mixture continued every three hours after the cessation of the spasm. The dyspnœa is likely to recur on the next few nights but with diminishing severity; if it lasts longer a nourishing diet and tonic treatment are indicated. Children subject to laryngeal spasm nearly always suffer from adenoids and these should be removed after the laryngitis has subsided. If the laryngitis grows worse and the dyspnœa becomes continuous and severe one may be sure that œdema is occurring or membrane forming in the larynx. An attempt should then be made to inspect the larynx, and this is frequently possible even in very small children, as a rapid glimpse is sufficient to show the swollen upper aperture or the whitish membranous deposit; failing this the part should be quickly palpated with the finger. If œdema is present leeching may be tried, one or more being applied over the manubrium sterni rather than to the neck, so that the bleeding may be arrested, if necessary, by pressure. An icebag to the neck is hardly permissible in very young children, but may be applied with caution in older cases for not more than about three hours, and a spray of adrenalin may be used, but too much time must not be spent on these palliative measures, for children are quickly exhausted by dyspnœa and collapse with great rapidity. If the upper aperture can be felt to be swollen it should be freely scarified with a guarded curved bistoury guided by the left forefinger on the affected part. This often gives rapid relief, but if it is insufficient, or if the swelling is out of reach in the subglottic region, tracheotomy or intubation must be performed without delay.

The Treatment of Inoperable Cancer by Amylic Alcohol.—In the *British Medical Journal* for August 27, 1910, the *Journal des praticiens* of May 7, 1910, is cited in a note showing the local use by Hosand of amylic alcohol in the treatment of various types of ulcer, including those of syphilitic origin and ulcers of a malignant type. Three to ten drops scattered over the surface of a cancerous wound appears to produce an abundant secretion which by the ultramicroscope is found to contain a variety of dead organisms. The nauseating odor of the ulcer disappears and the surface gradually narrows and retracts. The wound, in fact, seems to dry up. The patient begins to sleep again, recovers his appetite and courage. The treatment is administered twice daily. The author quotes a case of cancer of the breast, treated unsuccessfully by radiotherapy, which yielded to local treatment by amylic alcohol. Unfortunately the disease was too widespread for complete cure. He also mentions a case of cancer of the penis which it was possible to operate in only after prolonged local treatment by amylic alcohol.

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PERNICIOUS ANÆMIA.

During the sixty odd years since Thomas Addison first described idiopathic anæmia, later named pernicious anæmia, many observers have endeavored to find a specific cause or constant factors in its causation upon which to base an accurate definition of the malady. They have also sought to assign to the clinical disease a constant and specific pathological lesion or lesions and a uniform pathogenesis. Upon an accurate knowledge of the ætiology and pathology it was hoped that a treatment might be developed which would be both scientific and reasonably successful in combating the almost uniformly fatal outcome.

The discovery of the bothriocephalus and ankylostomum at once removed cases of these diseases from the group of idiopathic anæmias. The anæmias associated with malignant diseases are also no longer to be classed as idiopathic or pernicious for to them a definite cause can be assigned.

Professor E. Grawitz, of the University of Berlin, in an address entitled The Definition of Pernicious Anæmia and its Treatment, given recently at the New York Academy of Medicine, limits the term pernicious anæmia to cases of anæmia with degeneration of the red cells and without parasitic or discoverable organic disease. He applies the term therefore only to cases of severe anæmia which are cryptogenetic in origin. He contends that the blood picture is not at all a specific one, but that all its features may be found in the severe anæmias due to one or another definite primary disease. He does not consider the color index as of much value, for the hæmoglobin is so reduced that its estimation is very inexact and the red cells are in practice not at all accurately enumerated, the minute and fragmentary forms seldom being counted. The poikilocytosis is often as intense in the secondary anæmias. and the megalocytes, upon the abundance of which so much stress has been laid, he has shown by many accurate counts to be no more plentiful in this than in other severe forms. In fact, he regards the microcytes as perhaps of more importance, being an indication of erythrocytic degeneration. Megaloblasts are considered by him as a possible index of the severity of the disease, but not of the type, for they are found constantly in cases not idiopathic. How they indicate the severity he does not say.

In his discussion of the pathology he lays greatest stress upon the degeneration of the heart muscle, the hæmorrhages in the heart and other organs, and the bone marrow changes. None of these is at all specific. The heart muscle degeneration and the hæmorrhages are not infrequently seen in other diseases, while the bone marrow in true pernicious anæmia may be quite normal or may even show less than the usual percentage of megaloblasts. In this connection he opposes the dualistic idea of hyperplastic and aplastic forms and classes both as pernicious anæmia, considering the aplastic marrow merely as a feature indicating an absence of regenerative powers and not as an element of pathogenesis or as ground for a new type of anæmia.

The matter of ætiology has been greatly simplified and made to afford a basis for logical therapy if we are to accept Grawitz's conclusions. He holds that there are cases undoubtedly arising from repeated severe loss of blood in which regeneration does not become active—cases of methæmorrhagic anæmia. From hæmorrhoids and epistaxis come the only hæmorrhages that in his view can be admitted, for uterine myomata, intestinal ulcers, etc., introduce a toxic element which is tangible and of organic origin; hence the cases are no longer idiopathic.

Lead, arsenic, and morphine may give the impetus to a generation of red cells which ends in a typical pernicious anæmia long after these substances themselves have ceased to act. The most frequent and important cause, however, is the absence or great diminution in the amount of gastric hydrochloric acid. This leads to the development of an intestinal intoxication—first by the absence of disinfection of food stuffs in the stomach and more particularly by the failure of destruction of the organisms derived from unclean mouths and decaying teeth. These organisms pass into the intestine and lead to an inflammation with the production of hæmolytic toxines. These toxines are not definitely known. The lipoid substances and oleic acid, once considered, can be found in abundance in the intestine in health, and hence are probably not the toxic factors, although they are strongly hæmolytic. Secondly, the intoxication may arise through the incomplete destruction and metabolism of heterogeneous albumins. Experimentally, an anaphylaxia to heterogeneous albumins and their intermediate products of destruction can be produced, and the resulting intoxication is marked by a pronounced hæmolysis.

As a result of his observations, and more particularly depending upon his views as to ætiology, Grawitz outlines a course of treatment in which he seeks to combat the causes and overcome their effects. All animal albumin is to be eliminated from the diet, which is to be exclusively of carbohydrates and fats. A daily lavage with a one or two per cent. solution of sodium chloride and a daily colon irrigation of the same are to be given. Lemon and other fruit juices are administered to supply the lack of hydrochloric acid. Strangely enough, he does not speak of using dilute hydrochloric acid at all. Alcohol can be employed to alleviate the exhaustion. Great emphasis is laid upon the use of digitalis as a means of sustaining the weakened heart, and it should be given from the very first. When, as a result of these measures, the temperature falls and the appetite returns, it is time to begin the hypodermic use of one of the inorganic salts of arsenic in very small doses. The organic salts are far more dangerous than the inorganic, because of their insidious toxic effects. Transfusion is valuable, but must be preceded by hæmolytic tests in each instance. As not all cases are of toxic origin, and as in some there is no power of regeneration, this treatment is not always successful. If the case does respond, a relapse must be guarded against by insisting that a diet which contains no animal albumin be rigidly adhered to during the remainder of the patient's life.

THE IMPORTANCE OF CASE RECORDS.

In spite of all that has been said and written on the subject by many whose prominence in the medical profession entitles their opinions to the most careful consideration, it is still unfortunately true that the general practitioner is too often apt to undervalue or at least to neglect the important duty of keeping case records. We have called the practice a "duty" because we conceive that it is more than a mere aid to the memory of the physician. Even if we concede that some men's memory rarely fails them, and that the majority of cases that come under the notice of the general practitioner have little if anything in them deserving of special record individually, there are grave and weighty reasons why, in the interest both of medical science and of the physician himself, permanent memoranda of special details, in even the simplest cases, should be preserved.

No matter how simple or how common the ailment, the progress made in these days in medical science by a process of collective investigation often brings it about that a new discovery of import is initiated by or turns on the collation of a number of statistical details. The chance observation that some condition which we have continued for decades to consider simple merely because it is common, is prevalent among one sex or at a certain period of life or under this, that, or another condition of environment or habit of life, etc., may lead to the discovery of an ætiological factor previously unsuspected, and perhaps suggest prophylactic measures of great value. It is impossible to foresee where the identification of a single more or less constant factor or phenomenon may lead, in the way of revolutionizing our knowledge of a particular condition.

Each one of us has the responsibility of rendering available to the science of medicine, not only the results of his own personal experience and observation in regard to disease, but also the statistical data necessary to confirm or disprove theories propounded by those workers whose labor leads them more directly into the field of research. How often do we note some deduction offered with the remark that the number of observations is as yet too few to give it other than a tentative value! But it would be as easy, if the mass of practitioners habitually kept a careful record, uniform in style, of all their cases, to adduce at once the necessary statistics from the past as it would to wait for a long series of observations in the future to confirm or disprove the deductions. The keeping of case records as to all the important factors that influence disease is a service to medicine which every physician can render and which he ought to render.

Of the importance of the practice to the physician himself it would seem that hardly too much could be said. In nothing, perhaps, does the physician so often fail as in his prognosis. His diagnosis may be questioned and he may yet retain the confidence of his clientèle, who may consider his opinion as equally likely to be right with that of another. But the verification or disproof of his prognosis is a matter that demands no technical skill; it demonstrates itself in course of time. Like all other verbal communications, it is liable to misapprehension or even misrepresentation in the event of an unsuccessful termination to the case. It is so easy to convert a guarded prognosis, lightened as much as possible for the support of the patient and the consolation of his friends with words of hopefulness, into the assertion that "the doctor said it was a simple case." An exact record of the words used might have quashed many a case of attempted extortion on the ground of malpractice.

In like manner records made at the time are always of value in medicolegal cases, and it might well be borne in mind by the physician that the public has developed in recent years a disquieting tendency to discover malpractice in cases that do not end fortunately and even in many that do end as well as could be expected under the circumstances. It is useless to ignore the fact that, while in many respects there is a growing appreciation by the public of the immense services rendered by medical science to the general well being of the community, there is also an increasing lack of confidence by the individual patient in the individual physician. Of this the running after strange gods in the shape of various isms and pathies by even the most highly educated people affords ample testimony.

VENOMOUS SNAKES.

It must be confessed that the achievements of therapeutics in saving the lives of persons stung by poisonous snakes have not, on the whole, been very brilliant. Yet there is no lack of persons who are confident that certain measures may almost surely be depended upon. It is but a few years since a large proportion of our professional brethren in Australasia trusted implicitly in the subcutaneous use of strychnine, all through medical literature there runs a vein of confidence in the topical application of potassium permanganate, and the general public look upon huge draughts of whiskey as well nigh infallible. But it would, we think, be quite unwise to look for specially good results from any one of these vaunted remedies.

It is well that the subject should be studied at every opportunity and treated of in our literature. It is a good thing, therefore, that Lieutenant W. Culbert Lyon, of the Army Medical Reserve Corps, should have contributed to the October number of the *Military Surgeon* an article dealing with the stings of the venomous snakes of the United States and their treatment. He says of whiskey that it is "most dangerous, as the venom is a powerful depressant to the special nerve centres, particularly those of the respiration and heart, and the effect produced by the overstimulation of a pint or more of whiskey only adds to and increases the already existing condition of depression." If whiskey is employed at all, he thinks, it should be administered only in small doses, a little over an ounce every half hour, to assist in combating shock. This, we think, is the view generally held by the medical profession at the present time.

The author approves of constricting the limb above the wound and then incising the parts freely by a crucial cut, which should include both fang punctures, so as to allow of considerable hæmorrhage and efficient suction. The ligature, he remarks, may be constituted by a handkerchief, a necktie, a garter, a suspender, or a few blades of stout grass. He would then give subcutaneous injections of a fortieth or a thirtieth of a grain of strychnine from time to time, according to the patient's condition as regards shock. With respect to the ligature, he advises its temporary relaxation at intervals, both to prevent gangrene and to admit a little of the venom into the general circulation, so that the system may dispose of it piecemeal, so to speak. The relaxation should last for a few seconds only and should be practised every fifteen minutes for an hour. The patient should remain recumbent and absolutely quiet for five or six hours.

Dr. Lyon has no great opinion of potassium permanganate, regarding it as "much overestimated and of very little if any value." He thinks that chemical neutralization of the poison in the wound is best accomplished by injecting five or six minims of a freshly prepared ten per cent. solution of calcium chloride at ten or twelve different points within two inches of the wound, as advised by Calmette. Calmette's antitoxine, known as antivenene, he regards as a very valuable preparation, and he regrets that it is not more easily obtained in the United States.

THE CENTENARY OF THE UNIVERSITY OF BERLIN.

On October 10, 1910, the University of Berlin celebrated its first centennial of existence. One of the youngest universities of the German empire, founded by Alexander von Humboldt and the well known physician Christoph Wilhelm Hufeland when the Prussian kingdom was at its lowest political level, the university has, during the past hundred years, played an important rôle in German education. There had existed for quite a long time a scientific school in Berlin, and medical lectures had been delivered since 1724. The university of the electorate of Brandenburg was founded in 1506 in Frankfurt, a. d. Oder, which city at that time far surpassed the small capital Berlin, but its doors were closed in 1811, when the university was transferred to Breslau. We extend our heartiest congratulations and hope that the medical school of Berlin will always uphold the ideals of our profession and will continue to be a fountain of knowledge for the coming generations as it has been for the present one.

Obituary.

ERNST VON LEYDEN, M. D., of Berlin.

Ernst von Leyden died on October 5th, in his seventy-eighth year. Born in Danzig, April 20, 1832, he received his medical education in Berlin, where he was graduated in 1854. In that year he entered the army as a medical officer. Twelve years later he resigned his position to become professor of medicine at the University of Königsberg. In 1872 he was called to Strassburg, and since 1876 he has held the first chair of medicine in the University of Berlin, from which position he resigned shortly before his death. In 1896 he was knighted.

Von Leyden was an able diagnostician, an experienced clinician, a good teacher, and a prolific writer, whose works dealt with nearly every organ of the body, but his most important writings treated of the spinal cord. He was a leader in cancer research and in the fight against tuberculosis.

JOHN VEITCH SHOEMAKER, M. D., LL. D., of Philadelphia.

Dr. Shoemaker died on Tuesday, October 11th, aged fifty-eight years. His health had been failing for a number of months, and about a year ago he had an attack of apoplexy. After the stroke he was soon able to attend to professional work again, and he resolutely performed it almost to the last. He was a graduate of the Jefferson Medical College, of the class of 1874. He soon became a lecturer in the Philadelphia School of Anatomy and subsequently in the Jefferson Medical College. A number of years later he was active in founding the Medico-Chirurgical College, in which he remained a professor up to the time of his death. He was a dermatologist of distinction, but still more a general therapeutist. For many years he was the editor of the *Medical Bulletin,* and he frequently wrote for other medical journals. For a considerable period he served as surgeon general of the National Guard of the State of Pennsylvania. He was an attractive man personally.

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News Items.

Changes of Address.—Dr. James Moran, to 101 West Eightieth Street, New York.

Dr. William Norris Hubbard, to 180 West Fifty-ninth Street, New York.

Dr. Max Strunsky, to 24 West Forty-fifth Street, New York.

Dr. William Brewster Clark and Dr. Edward Leland Kellogg, to 48 West Fifty-first Street, New York.

Dr. David Lazarus, to 76 West Eighty-fifth Street, New York.

Dr. Julian W. Brandeis, to 65 West One Hundred and Twenty-sixth Street, New York.

Dr. William T. Shoemaker, has moved his office to his residence at 109 South Twelfth Street, Philadelphia.

Ehrlich's 606 to be Tested at the Sydenham Hospital.—Dr. Louis Fischer announces that he has received a limited supply of Ehrlich's 606, and will be pleased to attend, at the Babies' Ward of the Sydenham Hospital, a limited number of children having distinct syphilitic manifestations.

The Nu Sigma Nu Alumni Association will hold its seventh annual banquet at the Yale Club on Saturday evening, December 3d. Dr. Henry W. Wandless is secretary and treasurer of the organization.

Dr. Crothers to Lecture in St. Louis.—Dr. T. D. Crothers, of Hartford, Conn., will deliver a series of lectures on Alcohol and Drug Addiction before the students of the American Medical College, of St. Louis, Mo. These lectures will be given on December 8th, 9th, and 10th, and will be open to the general public, as well as to members of the medical profession.

The Manhattan Medical Society.—At the next meeting of this society, which will be held at Reisenweber's Café, New York, on Friday, October 28th, Dr. C. E. de M. Sajous will be the guest of the society at a reception at 8:30 o'clock, and later in the evening will read a paper entitled The Adrenals in General Pathogenesis. Dr. Ross McPherson, 20 West Fiftieth Street, New York, is secretary of the society.

The Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, October 17th, at 8:30 o'clock. Dr. George Dow Scott will read a paper entitled Nasal Diphtheria in Infants. Dr. Edward D. Fisher will read a paper on Psychotherapy, its Uses and Abuses, which will be discussed by Dr. George W. Jacoby, Dr. Graeme M. Hammond, Dr. Smith Ely Jelliffe, and others.

The Second Triennial International Conference on the Study of Cancer concluded a five days' convention in Paris on October 8th. There were present two hundred and fifty delegates, representing twenty-two countries. Dr. W. B. Coley, Dr. James Ewing, Dr. S. P. Beebe, and Dr. Harvey Gaylord were among the American physicians who attended the conference. Dr. Reid Hunt, of the United States Public Health and Marine Hospital Service, was an official delegate from the United States.

The Medical College of South Carolina began its eighty-second annual session on October 3d. The college was to have been opened on Saturday, but on account of the death of Dr. J. S Buist the opening was postponed. The principal address was delivered by the Hon. James Simons, a member of the board of trustees. A new feature of this year's work will be a special course of lectures on sanitation and tropical diseases by Dr. Baylis H. Earle, of the United States Public Health and Marine Hospital Service.

The Associated Physicians of Long Island.—The October meeting of this society will be held in Oyster Bay on Saturday afternoon, October 15th, at three o'clock in the afternoon. Mr. Theodore Roosevelt will deliver the address of welcome. An interesting feature of the programme will be a moving picture exhibition of the habits and disease carrying methods of the house fly. A splendid programme of scientific papers has been prepared. The annual dinner will be served in the evening, and a special train will leave Oyster Bay at 8:30 p. m. A large attendance is expected.

Free Lectures on Public Health Problems at Columbia.—A course of lectures on problems relating to public health, similar to that given last year, has been arranged, and the first lecture of the series was given last Monday afternoon, by Dr. Hermann M. Biggs, general medical officer of the New York Department of Health. His topic was the Development of Public Health Work. These lectures are given every Monday afternoon at five o'clock in the Horace Mann Auditorium of Teachers College and are free to the public. The next lecture will be delivered by Dr. C. E. A. Winslow on Water Pollution and Water Purification.

Resignations from the Faculty of the University of Pennsylvania.—Simultaneously with the resignation of Provost Charles Custis Harrison and Dr. J. William White, came the announcement that Dr. De Forest Willard, professor of orthopædic surgery, had resigned from the faculty of the University of Pennsylvania. Dr. Willard is sixty-four years of age and is retiring to take a much needed rest. He has been connected with the University for thirty-three years, starting in 1867 as an assistant demonstrator in anatomy and surgery and instructor in orthopædic surgery. It is rumored that Dr. White will be succeeded by Dr. John B. Deaver as John Rhea Barton professor of surgery.

The Medical Society of the County of Orleans, N. Y., met in annual session at Knowlesville on Wednesday, October 7th, and elected the following officers for the ensuing year: President, Dr. J. H. Taylor, of Holley; vice-president, Dr. F. W. Scott, of Medina; secretary and treasurer, Dr. Ralph E. Brodie, of Albion; censors, Dr. Edward Munson, of Medina, Dr. George Post, of Lyndonville, and Dr. John Dugan, of Albion.

New York and New England Association of Railway Surgeons.—The twentieth annual meeting of this organization will be held in the Hotel Astor, New York, on November 3d and 4th, under the presidency of Dr. L. M. Bingham, of Burlington, Vt. An excellent programme has been arranged. The address in surgery will be delivered by Dr. John B. Deaver, of Philadelphia, on November 3d, at 12 o'clock. A cordial invitation is extended to railway officials, railway surgeons, and to the medical profession in general to attend the meeting. Dr. George Chaffee, of 338 Forty-seventh Street, Brooklyn, is corresponding secretary of the association.

Medical Society of Virginia.—The forty-first annual meeting of this society will be held in Norfolk on October 25th, 26th, 27th, and 28th, in the Auditorium of the Monticello Hotel. Fifty-two papers are listed on the programme, covering a wide range of subjects of interest to the general practitioner. Ample preparations have also been made for the entertainment of the visiting members and their friends, and the meeting gives promise of being unusually interesting. The present officers of the society are: President, Dr. E. T. Brady, of Abingdon; vice-presidents, Dr. W. A. Plecker, of Virgilina, Dr. J. S. Irvin, of Danville, and Dr. R. H. Whitehead, of University; secretary, Dr. Landon B. Edwards; treasurer, Dr. R. M. Slaughter, of Theological Seminary; membership committee, Dr. William D. Turner, of Smithfield; legislative committee, Dr. George A. Stover, of South Boston.

Columbia University Needs a Hospital.—Dr. Samuel W. Lambert, dean of the College of Physicians and Surgeons, the medical department of Columbia University, has submitted a strong plea for the establishment of a hospital in connection with the university's medical instruction, in his annual report to the president. Efforts on the part of the medical school to enter into an alliance with a hospital already in existence, presumably the Roosevelt, have failed, he declares, and it now appears that the university must build a hospital of its own. For this purpose Dean Lambert believes the sum of $6,000,000 would be necessary to build, equip, and endow a hospital of 300 beds. It is his suggestion that when the new buildings for the College of Physicians and Surgeons are built on Morningside Heights, one of the group should be a hospital structure, where students may obtain practical experience in treating patients.

A New Research Laboratory for the New York Department of Health.—In a recent report submitted to Commissioner Lederle concerning the work done in the research department of the Board of Health, Dr. Hermann M. Biggs, general medical officer of the department, recommended the establishment of a new research laboratory to be devoted to the study of specific therapy and preventive medicine. According to Dr. Biggs's idea the new department should be composed of bacteriologists acquainted with the needs of clinical medicine, and of physicians familiar with the most advanced methods of laboratory work. The cost to the city, including salaries, equipment and supplies, is estimated at $45,000 a year. The work which Dr. Biggs outlines as requiring the services of a new force of workers is the carrying out and making effective the latest scientific discoveries in the field of vaccines, serums, and preventive medicine. Among the subjects to receive the immediate attention of such a force are the preparation and use of tuberculin, the manufacture of the serum used in the treatment of cerebrospinal meningitis, the devising of some means to administer diphtheria antitoxine internally, the perfection of the serum used in the treatment of puerperal fever and other septic conditions, such as erysipelas, etc. Dr. Biggs thinks that the department should have a bacteriologist to prepare the serum, and a physician trained in laboratory methods to make the bacteriological diagnosis through blood cultures and to administer the serum in the homes of the poor. Diseases such as pneumonia, influenza, scarlet fever and measles, should be made the subject of special investigation.

New York Pathological Society.—A regular meeting of this society was held at the Academy of Medicine on Wednesday evening, October 12th. The programme included the following papers: A New Method for the Estimation of Cranial Capacity at Autopsy, by Dr. Rosanoff and Dr. Wiseman; Studies in Heredity in Cancer of the White Rat, by Dr. Levin and Dr. Littenfield; The Conducting System of the Heart, its Normal Anatomy in Man and Certain Other Mammals, by Dr. A. E. Cohn; the demonstration of a case of pulmonary stenosis; and a paper entitled Calcification of the Heart Muscle Fibres, by Dr. Charles Norris and Dr. A. M. Pappenheimer. The November meeting of the society will be held jointly with the Philadelphia Pathological Society at the New York Academy of Medicine, and members who desire to present papers at this meeting should submit the titles as soon as possible, in order that they may be included in the programme. Dr. Richard M. Pearce, of the department of research medicine, University of Pennsylvania, is president of the society.

The Medical Society of the State of Pennsylvania.—The sixtieth annual meeting of this society was held in Pittsburgh on October 4th, 5th, 6th, and 7th. There was an unusually large attendance, over a thousand delegates having registered, and the meeting was in every way one of the most successful in the history of the organization. The discussions were of more than ordinary interest, not only to the medical profession, but to the general public. An important part of the work of the meeting was the adoption of a resolution calling on the State authorities to institute a rigid investigation into the management of all hospitals receiving State appropriations to carry on charity work. The resolution provided that the next session of the Legislature empower the Governor to appoint a commission to conduct the investigation, this commission to be composed of the officers of the State board of charities, three members of the house of representatives, three State senators, two physicians, and a lawyer. The following officers were elected to serve for the ensuing year: President, Dr. John B. Donaldson, of Canonsburg; vice-presidents, Dr. D. S. Fink, of Harrisburg; Dr. W. F. Dene, of Lebanon, and Dr. S. Mahon, of Allegheny County; secretary, Dr. E. C. Stevens, of Athens; treasurer, Dr. George W. Wagoner, of Johnstown; trustees, Dr. J. C. Gable, of York; Dr. George C. Harmon, of Huntingdon; Dr. William L. Estes, of South Bethlehem, and Dr. Thomas D. Davis, of Pittsburgh.

Society Meetings for the Coming Week:

Monday, *October 17th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

Tuesday, *October 18th.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association.

Wednesday, *October 19th.*—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

Thursday, *October 20th.*—New York Academy of Medicine: German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo, N. Y.

Friday, *October 21st.*—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society.

Saturday, *October 22d.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society; Lenox Medical and Surgical Society.

Mortality Statistics of Minneapolis.—During the month of August, 1910, there were reported to the Department of Health of Minneapolis 342 deaths from all causes, in an estimated population of 310,000, corresponding to an annual death rate of 11.41 in a thousand of population. There were ten stillbirths, eight males and two females. The deaths of children under five years of age numbered 120, of whom 81 were under one year of age. Of the total number of deaths 60 were due to diarrhœa and enteritis under two years of age; 26 to cancer, and 24 to pulmonary tuberculosis. There were 8 violent deaths, three of which were suicides.

Many Suicides in Russia.—Incomplete returns from the various provinces show that 631 attempts at suicide were made by persons in Russia in the month beginning August 14th and ending September 13th. Of this number 329 attempts were successful. One hundred and twenty-one of the persons who took their lives lived in small towns. At Krasnoyarsk, capital of the Government of Yeniseisk, Siberia, 13 men and 4 women committed suicide, while 17 men and 37 women made unsuccessful attempts to end their lives. In St. Petersburg there were 25 suicides and 30 unsuccessful attempts, and at Moscow 29 persons killed themselves and 42 others tried to do so.

Vital Statistics of New York.—During the week ending October 1, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,352, corresponding to an annual death rate of 14.68 in a thousand of population, as compared with a rate of 13.62 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 15.19; the Bronx, 17.09; Brooklyn, 13.31; Queens, 13.57; Richmond, 18.68. There were 127 stillbirths. The deaths of children under five years of age numbered 418, of whom 311 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 139; over five years of age, 146. There were 15 deaths from suicide, 4 from homicide, and 65 due to accidents.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending October 8, 1910:

	October 1st.		October 8th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	578	178	511	155
Diphtheria and croup	267	13	202	20
Measles	60	8	53	3
Scarlet fever	78	3	77	4
Smallpox	..	..	..	..
Varicella	20	..	35	..
Typhoid fever	136	24	143	17
Whooping cough	48	4	33	5
Cerebrospinal meningitis	3	5	4	7
Total	1,190	235	1,058	211

Hospital Accommodations for Consumptives in the United States.—In a bulletin issued by the National Association for the Study and Prevention of Tuberculosis it is shown how the million dollars which it is hoped to obtain from the sale of the Red Cross Christmas seals will be used to provide much needed hospital accommodations for tuberculosis patients. Counting every available bed for consumptives in the United States, even those in almshouses, penal institutions, and hospitals for the insane, there are at the present time accommodations for hardly 30,000 tuberculosis patients. This is just about one bed for every ten indigent consumptives, and if all tuberculous persons in the country are counted, both rich and poor, hardly one for every twenty-five or thirty. If sufficient hospital accommodations are provided only for those who are too poor to pay the full price for their treatment, fully 275,000 more beds in special institutions for tuberculosis would be needed at once. The immense outlay necessary to provide and maintain so many beds in hospitals, makes it imperative that such institutions be erected from public funds, either municipal, county or State. In order to get appropriations for public hospitals for tuberculosis, agitation is necessary, and in order to create a campaign of agitation, organization is demanded. But in order that an organization may carry on an effective campaign, funds are needed. These funds it is proposed to secure, in as many communities as possible, from the sale of Red Cross Christmas Seals.

The Health of Philadelphia.—During the week ending September 3, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Malarial fever, 1 case, 0 deaths; typhoid fever, 73 cases, 4 deaths; scarlet fever, 8 cases, 3 deaths; chickenpox, 4 cases, 0 deaths; diphtheria, 36 cases, 7 deaths; measles, 17 cases, 1 death; whooping cough, 27 cases, 7 deaths; pulmonary tuberculosis, 118 cases, 43 deaths; pneumonia, 13 cases, 19 deaths; erysipelas, 2 cases, 1 death; infantile paralysis, 7 cases, 0 deaths. There were 5 deaths from tuberculosis other than that of the lungs, 2 from dysentery, 2 from cholera morbus, 4 from puerperal fever, and 82 from diarrhœal diseases under two years of age. There were 41 stillbirths, 20 males and 21 females. The deaths from all causes numbered 449, in an estimated population of 1.500-595, corresponding to an annual death rate of 14.61 in a thousand of population.

Addition to the Post Hospital at Fort William McKinley, P. I.—The new reinforced concrete addition to the two story post hospital at Fort William McKinley, P. I., will contain the administration department of the hospital and one ward. This arrangement will supply the much needed space for patients in the old part of the hospital, and will furnish a suitable ward for officers and their families in the new part. Heretofore they have had to go to the Division Hospital in Manila for treatment. The hospital is expected to be completed and ready for occupation by Christmas time. Near the hospital a set of quarters is being constructed for the use of the hospital sergeants and their families. These are the first concrete quarters to be built in McKinley, and are nearing completion. The new post exchange building will be of reinforced concrete, one story high with a basement, and it is expected to be finished by the end of November. A new concrete wharf with a carrier crane is one of the construction specifications.

The Health of Chicago.—During the week ending October 1, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 105 cases, 13 deaths; measles, 14 cases, 1 death; whooping cough, 15 cases, 2 deaths; scarlet fever, 47 cases, 2 deaths; diphtheria, 121 cases, 12 deaths; chickenpox, 13 cases, 0 deaths; tuberculosis, 143 cases, 53 deaths; pneumonia, 15 cases, 60 deaths; cerebrospinal meningitis, 1 case, 1 death. There was 1 case of diarrhœal disease reported, and 20 cases of contagious diseases of minor importance, making the total number of cases reported 495, as compared with 466 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 93. There were 28 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 186, of whom 134 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 575, corresponding to an annual death rate of 13.7 in a thousand of population, as compared with a rate of 13.5 for the preceding week and 15.0 for the corresponding period last year.

Deaths from External Causes Other than Suicide During 1909.—According to figures recently given out by the Census Bureau, 47,135 deaths from external causes other than suicide, took place in the United States during the year 1909. The total number of homicidal deaths was 2,854, a decrease of 149 from the figures compiled for 1908. Among the causes of accidental deaths, in the order of numerical importance, for the year 1909, were the following: Railroad accidents and injuries, 6,659; drowning, 4,558; burns and scalds, 3,992; injuries at birth, hereafter to be classified under diseases of early infancy, 3,508; injuries by horses and vehicles, 2,152, not including injuries by street cars, 1,723, and automobile accidents and injuries, 632; injuries in mines and quarries, 1,997; inhalation of poisonous gases, including conflagration, 1,837; other accidental poisoning, 1,779; accidental gunshot wounds, 914; heat and sunstroke, 816; cold and freezing, 251; lightning, 150. There were 1,174 fatal injuries by machinery, chiefly in factories, but the large number, 10,108, of accidental traumatisms of unspecified nature makes it necessary to consider many of the figures given above as only minimal, and it is important that the means of injury be specified in all returns of death from accidental violence.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 29, 1910.

1. The Plastic Surgery of the Ovaries and Tubes, By WALTER C. SEELYE.
2. Postoperative Pneumonia without Mortality in Two Thousand Consecutive Surgical Operations at the Free Hospital for Women, By W. P. GRAVES.
3. An Analysis of Seventy-two Cases of Pneumothorax, By JAMES B. AYER.

2. **Postoperative Pneumonia without Mortality.**—Graves gives a statistical report of postoperative pneumonia in 2,000 consecutive surgical operations in women at the Free Hospital for Women at Boston, without death. Of these cases, 550 were uncombined laparotomies, 539 were laparotomies combined with vaginal and plastic operations, sixty-five were breast operations, and the remainder were mostly plastic. The methods of administration of the anæsthesia were as follows: Gas and ether with the Bennett inhaler 259 times, anæsthol with the open cone six times, ether by the drop method 124 times, ether with the open cone, 1,591 times. The anæsthetic, though for the most part given by medical students, who had short terms of service, was in every case under constant skillful supervision, so that in a partial sense its administration may be regarded as expert. Of the 1,089 laparotomies, pulmonary complications developed in twenty, of which eight were bronchopneumonia, three were pleurisy, and nine were bronchitis. Of the 911 cases not laparotomies, pulmonary complications developed twice, one being a pleurisy and one a bronchitis. Graves concludes that postoperative lung complications occur somewhat more frequently and are more fatal in cases previously septic or desperately sick or in the aged and feeble. Operative shock, method of administration, length of time of the anæsthesia, age of the patient unless extreme, physical type of the patient, bad behavior under ether, wound sepsis, pulmonary embolism, do not seem to bear any constant relationship to the causation of postoperative pneumonia. Postoperative pneumonia and bronchitis occur with great constancy during the cold weather months, and are rare during the summer months. Preexisting foci of infection in the lungs are almost invariably lighted up or aggravated by operations under anæsthesia. The following theory of causation is suggested by the writer: Most of the cases of postoperative lung complications are caused by the lighting up or the aggravation of preexisting focal infection. Many postoperative pneumonias might be avoided by a more careful and more expert preoperative examination of the respiratory tract.

3. **Analysis of Seventy-two Cases of Pneumothorax.**—Ayer reports seventy-two cases of pneumothorax which occurred in the Boston City Hospital during ten years, and adds to his number fifty-five cases previously reported by Dr. Morse. Of his 127 cases sixty-nine per cent. were tuberculous. Most were young or middle aged men, and most had a recent history of less than six months' illness. The left side was most often affected. Pain and dyspnœa were by far the most common symptoms at onset. The treatment in these cases was for the most part essentially that of the fluid present; the prognosis was anything but encouraging. Pneumothorax seems most frequently to occur on the side of a rapidly advancing process where adhesions are either absent or friable. The other lung and other parts of the body are apt to show long standing tuberculosis. It may follow a long standing empyema (of three months or more duration), by establishing a pleuropulmonic fistula or other means as yet not understood. The onset in these cases does not usually show the acute symptoms so characteristic of the tuberculous cases, but may even cause temporary relief. Operative treatment in these cases is frequently permanently successful. In traumatic cases we see fluid developing rapidly; the air does not, as a rule, last long and is probably of no serious import. Artificial pneumothorax occurred in nineteen per cent. Though agreeing with some other series, this is altogether too high a percentage. By use of a simpler and safer instrument than that commonly employed, we feel that artificial pneumothorax, although its occurrence is in many cases probably of no ill consequence, could be largely avoided. X ray examination has frequently made difficult cases clear, rendered diagnoses more exact, qualified prognosis, and explained the effect of treatment. Since this form of examination has come into more constant use in this hospital, pneumothorax has been more frequently diagnosticated.

October 6, 1910.

1. Immunity with Special Reference to Vaccine Therapy, By TIMOTHY LEARY.
2. Types of Graves's Disease, By J. G. MUMFORD.
3. Hysteria with Autopsy, By WILLIAM R. WOODBURY and CARLISLE REED.

1. **Vaccine Immunity.**—Leary reviews our present knowledge of vaccine immunity. About the practical procedures he says that the group of infections for which the average practitioner desires to use vaccine therapy, while comprehensive, is due to the activity of relatively few organisms. Staphylococcus vaccine is now accepted as the standard method of treatment of local conditions due to this organism. In general infections results are less satisfactory because such a general process is usually a pyæmia, and the organisms in a pyæmia are contained in masses of clot and are less accessible to the antibodies which may be formed. Among local infections, erysipelas responds in most cases with promptness. This is particularly true if an autogenous vaccine can be obtained. Local septic processes also respond promptly. The empirical use of vaccines made from autogenous throat cultures, and containing usually a mixture of the pneumococcus and streptococcus, has given usually prompt relief of pain and a bettering of other symptoms in a large percentage of the cases of rheumatism treated. The treatment of the associated infection in tuberculosis with autogenous vaccines in which the streptococcus and pneumococcus usually predominate is accompanied by diminution of temperature and relief of cough and night sweats, followed by increase of weight. The same can be said of pneumococcus and gonococcus processes. The frequency with which

Bacillus coli is an infecting agent has only been fully appreciated since vaccine therapy has been inaugurated. Toxic intoxication can be relieved usually within a few hours. The response in bladder infections, where well drained, is rapid and permanent where reinfection can be guarded against. Tuberculin, in proper doses, is a valuable addition to standard methods of treatment. Its use, however, is associated with dangers which make extreme caution necessary in its exhibition. Wright's method, which calls for an extremely small dose at weekly intervals, seems to eliminate all dangers.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 8, 1910.

1. Bacteriology of Acute Respiratory Infections in Children as Determined by Cultures from Bronchial Secretion, By L. EMMET HOLT.
2. The Negro as a Health Problem, By H. M. FOLKES.
3. Hemiplegia Following Acute Infections, By W. A. JONES and ARTHUR S. HAMILTON.
4. Tuberculosis in Market Milk of Chicago, By F. O. TONNEY.
5. Pathology and Treatment of Alveolar Abscess, By STEWART L. MCCURDY.
6. Improved Method of General Anæsthesia in Head Surgery by Means of Glass Nasal Tubes, By JOSEPH E. LUMBARD.
7. Report of a Case of Middle Meningeal Hæmorrhage Accompanied by Actual Hemiplegia: Operation, Recovery, By L. L. SMITH.
8. The Ætiology of Actinomycosis, By FREDERICK T. LORD.
9. Complement Fixation with an Antigenic Crystal Obtained from Luetic Liver, By CHARLES F. CRAIG.
10. The Pathology and Prognosis of Internal Ear Complications Resulting from Inflammatory Middle Ear Diseases, By J. HOLINGER.
11. Discussion of the Symptoms and Diagnosis of Infection of the Labyrinth Resulting from Suppurative Otitis Media, By J. R. FLETCHER.
12. The Present Status of Vertigo Considered from a Diagnostic Standpoint, By GEORGE E. DAVIS.
13. Foibles in Specialism, By C. F. WAHRER.
14. A Case of Colloid Carcinoma of the Skin, By A. BAMBERGER.
15. The Pathology of Joint Tuberculosis; Tuberculous Sinuses, By LEONARD W. ELY.

1. **Bacteriology of Acute Respiratory Infections in Children.**—Holt's statistical table shows that acute pneumonia and bronchitis of early life is a very mixed infection; pure cultures were practically never seen, and pneumococcus and *Staphylococcus aureus* predominating, while the streptococcus was rarely the predominant organism. The presence of the *Bacillus influenzæ* was more frequently associated with symptoms of the lower than with those of the upper respiratory tract.

2. **The Negro as a Health Problem.**—Folkes says that there was a higher standard of physical health among negro children before the war than has ever been attained since the emancipation, for among other unfortunate sequelæ following this perfectly righteous step was the handing over of the lives and care of negro progeny to their more or less fatalistic parents, who, removed from the control of intelligent direction, soon lapsed into their African condition of irresponsibility. The unfortunate creatures (as the negro race has done in all history) then reverted, in a large measure, to aboriginal conditions.

5. **Alveolar Abscess.**—McCurdy observes that dentists should realize the seriousness of the most frequent operation they perform, namely, that of devitalizing and extracting pulps, since infection and serious bone destruction originate from this cause. Destruction of the bony floor of the antrum does not necessarily mean perforation of the membranous floor or infection. An alveolar fistula leading into a cavity where a considerable portion of a tooth is exposed requires extraction of this tooth before complete recovery can be expected. Persistent headaches and general reduction in health are frequently caused by very insidious alveolar abscesses. In destruction of the mandible, requiring removal of bone, it is advisable to establish drainage through the chin and approximate the gingival margins with sutures so as to shut off a pus cavity from the oral cavity. Nasooral fistula may be closed by a membranous flap from the roof of the mouth. In all suppurative conditions of the mouth pure tincture of iodine should be used as a disinfectant.

6. **Anæsthesia in Head Surgery.**—Lumbard describes an apparatus to be used in head surgery, the anæsthesia is induced in the usual way through the mouth, and later through the nose: The apparatus consists of two glass tubes so bent that each will properly fit a nostril. These tips are connected with the mechanism which supplies the anæsthetic vapor by means of two soft rubber tubes, joined together at the supply end by a glass, which also connects them with the supply tube itself. They are furnished in three different sizes in order to make the apparatus adapted to nostrils of different shapes.

11. **Labyrinthine Suppuration.**—Fletcher states that the internal ears are the special sense organs of equilibrium. With the internal ears we recognize (orientation) and maintain our relations to space (equilibrium). The visual sense organs (the eyes), and the kinesthetic sense organs (the muscles, etc.), are accessory sense organs of equilibrium and are coordinated with the special sense organs of equilibrium (the internal ears), through the mediation of the cerebellum. The two special sense organs of equilibrium (the internal ear of either side), are normally symmetrical in structure and function, and any factor whatever, whether physiological, experimental, or pathological, which innervates, stimulates, or irritates one of these twin organs in excess of the other (or on the other hand accomplishes the same thing through enervation, depression, or destruction of one in excess of the other), in that measure tends to or creates proportionately a disturbance of their joint functions—equilibrium. If the disturbance of equilibrium is sufficiently marked or intense we also get nystagmus and that unpleasant and complex phenomenon termed vertigo. But the mystic arcanum of the mechanism of the complex labyrinthine function of equilibration and orientation, or the mechanism of the perversion or disturbance of that function as manifested by vertigo, nystagmus, and disequilibration, are not yet unravelled; but the great interest

in research work now being directed along these paths augurs a satisfactory solution soon.

MEDICAL RECORD

October 8, 1910.

1. The Carbohydrate Diathesis, By W. E. Deeks.
2. Results in the Treatment of Diabetes Mellitus, By T. Stuart Hart.
3. Recent Progress in Anæthesia, By James Tayloe Gwathmey.
4. The Residual Appendix, By Oliver C. Smith.
5. Report of the Treatment of Typhoid Fever with Vaccine, By Austin W. Hollis.
6. Hæmophilia Treated by Transfusion, By Milton Hahn.
7. Statistical Analysis of over Sixty-eight Thousand Cases of Typhoid Fever. Report No. II. Mortality. By Abdullah K. Sallom.

1. **Carbohydrate Diathesis.**—Deeks adds other observations to his former papers in which he showed that most of the so called idiopathic indigestions or dyspepsias were due to dietetic errors, particularly the ingestion of sugars and starches in excess. This does not include indigestions arising from other causes. In other words, if no constitutional or organic disease or dyscrasia; no local inflammation such as appendicitis or cholecystitis; and no functional disorder as hysteria or neurasthenia exists—all of which give rise to digestive disturbances, and the individual suffers from indigestion—then sweet and starchy foods in quantity or in kind are responsible. They give rise to local disturbances by the inability of the stomach to handle them and more remotely through their fermentation; and resulting products are responsible for a large number of pathological conditions commonly referred to as due to errors in metabolism. His conclusions are that patients suffering from one or more of the following affections are consumers of an excess of carbohydrate food: Indigestion, gastric ulcer, decaying teeth, stomatitis, constipation, chronic pharyngitis, true rheumatic phenomena in all forms, eczema, acne, recurring bronchitis, anæmia, most dysmenorrhœas, enuresis, etc. He believes the diet to be indirectly responsible for appendicitis, and frequently tuberculosis. In the tropics, unless engaged in active physical exercise, the nearer we keep to a diet consisting of meat, fish, poultry, milk, green vegetables, and fruit, the less suffering we have. In this combination we find an energizing, tissue forming, low heat producing food, free from fermentative properties and containing enough of the indigestible vegetable cellulose to stimulate intestinal peristalsis and elimination. Sugars should not be consumed at all except in solution on an empty stomach, and then sparingly. The amount of starch ingested should be proportionate to the physical exertion involved.

4. **The Residual Appendix.** — Smith understands by the residual appendix the appendix vermiformis or a portion of it remaining following appendicular abscess, which may have been operated on by incision and drainage, or may have remained unoperated, the pus having been absorbed, or discharged without operation, or, general or spreading peritonitis due to appendicitis, when drainage only has been performed. In conclusion he states that from our knowledge of the pathology of appendicular inflammation and the comparative frequency with which it recurs sooner or later following an appendicular abscess or general peritonitis caused by inflammation, we must conclude that the residual appendix is much more subject to inflammation than the appendix which has not been diseased. If its mucosa is continuous with the cavity of the cæcum it is still exposed to infection. In addition to that, its circulation has usually been partially destroyed, it has become adherent to the abdominal wall, or some other organ, and is in a position to be strained or traumatized. Moreover, there may be residual concretions and residual pockets of pus within the lumen which did not escape at the primary attack. If these deductions are correct there can be no doubt of our duty in advising a secondary operation, and explaining thoroughly to the patient the reasons for, and the advantages of, this procedure.

BRITISH MEDICAL JOURNAL

September 24, 1910.

1. An Address on the Use and Abuse of the Lime Salts in Health and Disease, By Sir James Barr.
2. A Simple Curative Treatment of Cholera, By Leonard Rogers.
3. Notes on Cholera, By M. M. Basil.

2, 3. **Cholera.**—Rogers has carried out a long series of researches to prove the theory that the changes of the blood in cholera would yield valuable indications for its treatment. He first studied the loss of fluid from the blood and the degree of its concentration by measuring the volume of corpuscles and serum respectively by means of the hæmocrite. The results showed that in the mildest cases, not requiring transfusion, an average of one third of the fluid had been lost from the blood; in severe cases recovering after hypertonic injections, one half of the fluid had been lost; while in the most severe fatal cases no less than two thirds of the fluid of the blood had escaped. There was thus a very definite relationship between the amount of fluid lost and the severity of the case, although the rapidity of the loss is doubtless also a factor of great importance. These observations clearly indicate the necessity of replacing the lost fluid in the collapse stage of cholera. Of equal importance is the discovery that in cholera, in addition to the loss of fluid from the blood, there is also a great loss of the salts. Thus, instead of the percentage of chlorides becoming increased with the concentration of the blood, it remains comparatively low, and may even be below normal in the worst cases, the loss of salts being in some degree in proportion to the severity of the case. This change accounts for the comparative failure of injections of normal salines in cholera collapse, and furnishes an additional reason for the use of hypertonic solutions in order to replace the chlorides, as well as the fluid, lost from the blood in cholera. Raising the salts in the blood appears to check to some extent further loss of fluid from the blood, and so hypertonic injections are not often rapidly followed by an increase of the watery stools, as is so usually the case after normal salines, with rapid recurrence of collapse. The hypertonic solution consists of 120 grains of sodium chloride, 6 grains of potassium chloride, and 4 grains of calcium chloride to one pint of sterile water, so as to approximate in its composition to Ringer's fluid. In marked collapse in an adult male with little or no pulse at the wrist, three or four pints should be given intravenously at the rate of not more than four ounces per minute, being slowed at once to one ounce per minute if any distress or severe headache is caused. The specific gravity of the blood is a valuable guide, as. if it is raised to 1.062 or over, these quantities may safely be given. If it is not above normal the collapse is probably not due to cholera, and such copious intravenous injections may be dangerous by producing œdema of the lung. If collapse recurs after a hypertonic injection for cholera the same strength should be repeated. A marked rise of temperature follows these injections, which occasionally goes on to hyperpyrexia. The author then speaks of the destruction of toxines in the bowel.. Since the discovery of the comma bacillus, innumerable intestinal antiseptics have been used in the treatment of cholera with a view to destroying the causative organism in the bowel. The simple fact that none of these have come into general use, taken with the sustained mortality of the disease for many years past, is sufficient evidence that such antiseptics have no specific action against the disease. Their failure may best be explained in the following manner. We know that comma bacilli are practically limited to the interior of the bowel, and only penetrate slightly into the mucous membrane. The symptoms of the disease are therefore largely due to the absorption of the specific toxines from the intestinal contents. These toxines are mainly, if not entirely, intracellular in nature, and are only set free from the bodies of the bacilli after their death and disintegration in the alkaline bowel fluids, for the rice water stools of cholera are distinctly alkaline. This being the case, it is easy to conceive that the extensive destruction of comma bacilli in the bowel by intestinal antiseptics may actually result in the more rapid absorption of the deadly intracellular toxines, and so aggravate instead of curing the disease. It becomes clear, that an effectual cure of cholera—apart from any specific anticholeraic serum—is most likely to result from some simple method of destroying or rendering harmless the toxines within the bowel itself, thus preventing their absorption in fatal doses. He therefore set to work to find such an agent of a nonpoisonous nature, and found that the permanganates answered best. The permanganates are given in two different ways. First, in solution, to drink *ad libitum* in the place of water. Beginning with from ½ to 1 grain to the pint, on account of the unpleasant astringent taste, the strength is rapidly increased up to from 4 to 6 grains in 1 pint, or even stronger if the patient will swallow it. Fortunately, in severe cases the thirst is so great that no difficulty is usually experienced in pushing the drug in this way. Vomiting may occur, but does no harm. On the contrary, it probably helps to remove some toxine. Obstinate vomiting in cholera is sometimes relieved by the permanganate drinks, doubtless by destroying some irritant substances in the stomach. Calcium permanganate is the best salt for this purpose, being somewhat less astringent than the potassium one, while as it is divalent it will exert a greater oxidizing action. The calcium element may also possibly lessen the effusion through the bowel wall. The other method of administration is in pill form, for which purpose the potassium salt is more easily dispensed on account of the very hydroscopic properties of the calcium and sodium compounds. The simplest method is to mix two grains of potassium permanganate with a little kaolin powder and petrolatum, and make as small a pill as possible. It is then coated with salol one part, in sandarach varnish five parts, or with keratin so as to only dissolve on reaching the alkaline small intestine, where its action is wanted. It is important to see that the pills readily dissolve as they sometimes become hard and inefficient after being kept some time, and may then pass through the bowel unchanged. He gives one pill every quarter of an hour for the first two hours, and then every half hour until the stools become colored green and less copious, which usually occurs in about twelve hours. In mild cases they need only be given during alternate four hourly periods. Barley water may also be administered to maintain the strength, as it is not readily acted on by the permanganates. At the beginning of the second day eight more pills are given, and in severe cases this is repeated on the third day in order to avoid relapses.—Basil gives interesting notes on cholera. His experience dates since 1869. He remarks that cholera is not one disease, since a series of many conditions differing widely in their clinical features. and demanding different lines of treatment, are grouped under the name of cholera. In the treatment of cholera, he says, many facts must be remembered. In each epidemic the road tending to death must be studied. When people get rapidly livid, opiates must be avoided. What is sufficient at the beginning or end of an epidemic is not of any use in the middle period type of the disease. In the earlier milder cases he found salol and benzonaphthol very useful. In the epidemic of 1892 he saved many by chlorodyne or laudanum, but in 1903 he could not use them freely on account of the early uræmic type of the disease. He has used creoline, giving the liquid freshly dropped on flour, 4 to 6 drops rolled about in the flour by a stick, then turned on cigarette paper, gently enveloped in the paper, and swallowed. According to circumstances, he gave 4 to 6 doses of this bolus, repeating every second or third hour. The drug must be used fresh. Preparations of ether, valerianate of ammonia, friction, counter irritation, packing in hot towels, etc., are useful to bring about reaction, but the temperature must be carefully watched. Anything above 102° F. is already grave (in cholera), and not much should be done to bring about over reaction. He has tried the use of the physiological serum in small and abundant quantities, injected pints of it gradually or rapidly into the cellular tissues or into the peritoneal cavity. But he thinks it tends to add to the danger of uræmic poisoning. He has frequently used a serum having much less sodium chlorate than the usual proportion, but this has not given him better results. Some have used large enemata of tannin solution with good results.

LANCET.

September 24, 1910.

1. Ætiology and Treatment of Rheumatoid Arthritis, By P. W. LATHAM.
2. Clinical Surgery in Japan, By YOSHIHIRO TAKAKI.
3. On the Condition Called "Falling of the Womb," with Special Reference to the Operative Treatment of the More Severe Cases, By JOHN BENJAMIN HELLIER.
4. A Case of Bilateral Papillœdema and Ring Scotoma Due to Sphenoidal Sinusitis, By C. G. RUSS WOOD and G. F. C. WALLIS.
5. The Immediate Microscopical Diagnosis of Tumors at the Time of Operation, By ERNEST H. SHAW.
6. Pneumonia: An Inquiry into Some of the Mechanical Conditions which May Occur in the Chest in Adults Suffering from an Infection with the Pneumococcus of Fraenkel, and Observations on Treatment with Special Reference to the Use of Morphine; and on Some Surgical Conditions, By W. E. McKECHNIE.
7. The Radical Cure of Hæmorrhoids: Modified Whitehead's Operation, By JOHN O'CONOR.
8. Malignant Diphtheria with Multiple Lesions in an Infant, By J. D. ROLLESTON.
9. A Visit to Professor Treupel's Clinic: The Use of "606," By J. G. GARSON.
10. The Wandering Womb and Fumigation: A Chapter in Primitive Gynæcology, By DAN McKENZIE.

1. **Rheumatoid Arthritis.**—Latham thinks that rheumatoid arthritis is due to spinal irritation or congestion, or chronic myelitis chiefly affecting the ganglion cells of the anterior horns, but extending also, when the disease is associated with "glossic skin," to the ganglion cells in the posterior horns. The treatment should therefore be directed to the abatement of this spinal irritation, and this probably can most effectively be done by cupping or blistering the spine. He cites Professor J. K. Mitchell, the father of Professor Weir Mitchell, who in 1831 published a paper in the *American Journal of the Medical Sciences*, entitled A New Practice in Acute and Chronic Rheumatism, in which are described cases of chronic rheumatism arising from various causes, and cases of arthritic troubles following spinal injury, which were successfully treated by cupping and blistering. From 8 to 16 ounces of blood were abstracted from the neighborhood of the cervical or lumbar enlargements according as the upper or lower extremities were affected, and if the cupping did not afford relief blisters were applied to the same regions. The following is the plan usually adopted by Latham: Two cantharides plasters, four or five inches long by two and a half wide (painted over immediately before their application with linimentum cantharidis or liquor epispasticus to ensure rapid action), are applied at bedtime, one on each side of the seventh cervical vertebra or the twelfth dorsal according as the joints of the upper or lower extremities are most affected. The blisters are kept on for twenty-four hours. They are then removed, the loose cuticle cut away, and a bread poultice made with boric lotion applied for the night. In the morning the blistered surface is dressed with *freshly* prepared savine ointment spread on lint, and the dressing repeated every morning for eight or ten days. Each time before removing the lint it should be well soaked with boric lotion so as to prevent its adhering to the blistered surface and causing unnecessary pain to the patient. He generally administers twenty drops of laudanum the first night on applying the blisters, and if the joints are painful repeats the dose every night. If the joints both of the upper and lower limbs are affected, then seven or eight days after applying the two blisters, two others are applied one on each side of the seventh cervical vertebra if the first have been applied to the dorsal region, and *vice versa*, carrying out the same routine as before. The pain and swelling of the joints are generally much relieved in three or four days after the application of the blisters, even when no laudanum has been given, but the improvement is more marked, both as regards the swelling and the pain, when the narcotic is given. If the patient is suffering much pain, instead of the single evening dose he gives ten minims of laudanum together with thirty minims of the liquor hydrargyri perchloridi every six hours. While the counter irritation is being carried out it is most important that the patient should have complete rest in bed, the affected limbs being moved as little as possible, especially if movement causes pain. At the end of eight or ten days the healing of the blistered surfaces may be promoted by the application of some simple dressing. The patient's general health must be attended to, the diet must be such as can be easily digested—beef, mutton, fowl, etc.—with such alcoholic stimulants as are suitable. A daily action of the bowels must be ensured, and a proper amount of sleep must be obtained, if necessary by the regular administration at bedtime of opium or morphine. As the patient improves, massage, warm baths, radiant heat, etc., are important auxiliaries in the treatment, but on no account must massage be employed if it causes pain in any of the joints. As regards medicine, he has found the liquor hydrargyri perchloridi useful in doses of one drachm twice a day with some bitter infusion. Sometimes from three to five minims of liquor arsenicalis may be added to the perchloride solution, but it does not agree with all patients.

5, **Immediate Microscopical Diagnosis of Tumors.**—Shaw describes his method of the microscopical section: Everything must be arranged in a convenient manner, the microtome must be fixed on a firm table. The selected piece of tissue received from the surgeon is placed on the brass disc of the freezing microtome, and is surrounded by gum solution. The tissue and gum are frozen and sections made by a razor on a carrier. The sections are transferred to a dish of cold water, and after separating them with a glass rod a suitable section is lifted out. It is dipped for a moment into pure methylated spirit, and then placed into another larger dish of cold water; the currents set up by the spirit in the water cause the section to spread out flat. A glass slide is dipped in the water under the section, and the latter is lifted out as the slide is slowly drawn up out of the water again. The water is drained off the slide and a few drops of stain (Löffler's methylene blue) are allowed to fall directly on to the section. A thin cover glass is placed on the stain and section after several seconds; it is lightly pressed down, so as to drive out excess of stain: this is then blotted off, and the specimen is ready for examination under the microscope.

SEMAINE MÉDICALE

July 6, 1910.

Complication of Rubeola, By C. D. Martelli.

July 13, 1910.

The Débris of Total Abortions and Their Diagnosis, By M. Lejars.

July 20, 1910.

1. Clinical Form of Amyotrophic Rheumatism, By M. Klippel and M. Pierre Weil.
2. Remote Signs of Abdominal Cancer, By F. Lejars.

2. **Remote Signs of Abdominal Cancer.**—Lejars calls attention to the importance of enlargement of the supraclavicular glands in diagnosticating abdominal cancer. There are other signs, such as the patch of induration situated in front of the rectum and the shriveling of the umbilicus. It is therefore necessary to make a thorough examination of the rectum and the umbilicus.

July 27, 1910.

Hypnotism in Therapeutics and Medical Law, By J. Babinski.

Hypnotism in Therapeutics and Medical Law.—Babinski remarks that the theory, especially through Charcot's endeavors, was formerly accepted that hypnotism produced in certain persons a physical perturbation of the nervous system, resulting in exaltation of the suggestibility. Thus, under an exalted suggestibility certain troubles and morbid processes can become pathological manifestations and can then be cured under hypnotic influences. But to-day we know that hypnotism does not produce an excessive excitability of muscles or nerves, and the hypnotic states do not possess objective somatic characteristics, which it is impossible to produce by will power. The school of the Salpêtrière still accepts the somatic phenomena, while the school of Nancy is opposed to this theory, although it admits the existence of a hypnotic state without bringing any proof for it. The subjective will is not abolished in the hypnotic state, the patient does not become passive but still makes a selection from the different suggestions, and keeps his secrets. The hypnotic phenomena, as the hysterical phenomena, are products of suggestion and disappear under the influence of contra suggestion and persuasion. Hypnotism is therefore a product of the imagination and suggestion, and presents itself in very different aspects.

August 3, 1910.

Chloridation and Eclampsia, By A. Le Play.

Chloridation and Eclampsia.—Le Play opposes the view of Sippel, who warns against the dangers of subcutaneous salt injections in eclampsia, although Sippel admits that there exists a great difference between the introduction of salt solution hypodermically and by the digestive tract. Le Play cites eight cases of pregnancy nephritis and two of eclampsia, in which he gave the patients salt in their food, with the best therapeutic result, producing a flow of fluid into the alimentary canal, thus reducing the blood pressure and carrying away toxic products which were then eliminated.

August 10, 1910.

Infantilism from Digestive Insufficiency during the Nursling Period, By L. Cheinisse.

Infantilism.—Cheinisse bases his article upon Herter's essay on infantilism.

August 17, 1910.

Industrial Diseases, By V. Thébault.

Industrial Diseases.—Thébault remarks in a lengthy article that laws should be enacted to protect laborers from industrial diseases.

August 24, 1910.

Autochthonous Amœbic Dysentery, By C. Garvis.

August 31, 1910.

Traumatic Neuritis and Hysteria, By F. Motz.

BERLINER KLINISCHE WOCHENSCHRIFT

September 12, 1910.

1. The Theory of the Oatmeal Treatment in Diabetes, By Max Klotz.
2. 110 Cases of Syphilis Treated According to Ehrlich-Hata, By Michaelis.
3. A Convenient, Painless Method of Giving the Ehrlich-Hata Injection, By Kromayer.
4. A New Attempt in the Treatment of Cancer, By R. Oestreich.
5. The Arrow Poison of the Watindigas, By M. Krause.
6. Fracture of the Ribs with Intercostal Neuralgia, By Most.
7. Severe Chronic Spasm of the Colon, By R. Schuetz.
8. The Use of Protargol in Warm Solution, By Chrzelitzer.
9. A Case of Enormous Sarcoma of the Pleura with Calcification after Primary Sarcoma of the Tibia (*Concluded*), By Grabow.
10. Early Symptoms and Serum Treatment of Tetanus (*Concluded*), By Eyler.
11. Problems and Results of the Modern Zoological Investigation, By Olga Kuttner.

2. **110 Cases of Syphilis Treated with 606.**—Michaelis presents in the main similar results to those which have been reported by many other writers, but a few points seem to deserve special notice. Four infants with congenital syphilis underwent the treatment; two of these had serious visceral lesions, were in bad general condition, and died twenty-four hours after the injection. It was difficult to say whether the treatment accelerated death or not because both children were in an almost collapsed condition beforehand. A third infant lost almost all symptoms of syphilis within six days after the injection, but failed to recuperate and died on the twenty-fifth day of facial erysipelas. The autopsy revealed no trace of syphilitic changes and there were no spirochætæ to be found in the organs. In the fourth infant after the injection of 0.025 gramme in a glutæus there was rapid improvement and recuperation and the child has remained well. In a case of fresh parenchymatous keratitis the process was brought to a standstill, but without resorption of the opacity. He treated fifteen cases of tabes and eight of paralysis with positive Wassermann reaction. In advanced cases of these parasyphilitic diseases the injection proved useless, and it cannot be excluded that its influence may have been bad. On the other hand, patients with incipient cases bore the injection well and suffered no harm, except that in several cases severe, transient lancinating pains appeared as a kind of reaction. In several cases of tabes there resulted a marked improvement of the ataxia, and in a case of progressive paralysis a marked remission which has lasted two months, but as such things occur also spontaneously he wishes to withhold judgment for the present concerning the efficacy of the remedy in these diseases. He does not propose to increase his material in this respect until he can

obtain a satisfactory decision on the results thus far obtained. Attempts to use this treatment in lymphosarcoma and leuchæmia, in which arsenic is indicated, were without result. He observed no harmful after effects upon the eye, kidneys, heart, or nervous system. In one half of his cases the injection was made into the glutæi, in the rest subcutaneously, he has not used the intravenous injection. He concludes that the injection of 606 is indicated in cases of syphilis in which mercurial treatment fails, either because the symptoms do not retrogress, or because they immediately recur; in cases of syphilis in which mercury is not well borne; and in cases of syphilis in which the use of mercury should be avoided because of existing organic diseases, such as nephritis. The only contraindication he considers to be a serious general disease or excessive marasmus, which would cause apprehension that the intervention as such, with its pain and inflammation, would not be well borne.

3. **A Convenient, Painless Method of Giving the Ehrlich-Hata Injection.**—Kromayer recommends a ten per cent. emulsion of 606 in liquid paraffin. Before use it should be shaken until all the sediment has disappeared, and it must be kept protected from the light. The injection must be made very slowly. Kromayer says that he has used this in one hundred cases and seen pain and swelling in but a single case.

8. **Protargol in Warm Solution.**—Chrzelitzer considers protargol more efficient against gonorrhœa in warm solution than in cold. The solution should be freshly prepared each time; the cold prepared solution should not be warmed over.

SOUTHERN CALIFORNIA PRACTITIONER.

September, 1910.

1. The Nature and Treatment of Hysteria, By Charles Lewis Allen.
2. The Care of the Ears of Infants and Children, By William H. Dudley.
3. A Year's Work at the Eye Hospital of the United States Indian School, Phoenix, Arizona, By Ancil Martin.
4. Twentieth Anniversary of the Orange County Medical Association, By John L. Dryer.
5. Brief History of the Pasadena Medical Society, By D. B. Van Slyck.
6. The Open or Surgical Treatment of Fractures, By C. P. Thomas.

1. **Hysteria.**—Allen remarks that, while a definite physical basis for hysteria is highly improbable, there is no doubt that its manifestations may be excited by physical causes. That it is not a definite disease, but rather a mode of reaction, and a pathological one, is a conception which has forced itself upon all thoughtful students of the subject. While its causes are undoubtedly manifold, and we cannot deny that they may be connected with any organ, he is impressed by the fact that whatever they are, they bear specially upon the nervous system and interfere with its working. In fact from what we know of nervous physiology, hysterical manifestations would seem to stand in some relation to disordered function of the brain centres, particularly those of the cortex. Further than this we are unable to go. But morbid reactivity is not found in all individuals, for while the typical hysteric reacts to influences of the most trivial character, the strongest shocks, physical or psychic, may fail in normal individuals to set up any unusual reaction. We are hence forced to assume that in hysterical subjects there is some fault in the nervous arrangements whereby the abnormally excitable centres react in an unusual manner. This fault may be due to congenital defect and the transmission of such defect, through a greater or less number of generations, is only too well known to us, for while the particular form of disturbance present in the ascendants, does not always recur in the descendants, the latter may show by the presence of one or other neurosis, grave or mild, that they are suffering from insufficiency of the nervous system.

2. **The Care of Ears of Infants and Children.**—Dudley observes that during the period of teething of the child, earaches and acute otitis are not uncommon. In a child complaining of earache, without other sufficient cause, the teeth should be examined, and if found carous, the dentist should be consulted, and the teeth properly cared for. The pain may be simply a reflex neuralgia, which will be promptly relieved by proper care of the teeth; though an acute otitis may result from the same cause. The snuffing of cold water into the nose may cause an acute otitis, and parents should be warned in cleansing the noses and throats of children by this method, that the water should be made mildly saline, and warm. In fact, this is not an especially good method of cleansing the throat of a child. Some years ago, the practice of slapping or "boxing" the ears of children as a method of punishment was largely indulged in. It is a pernicious one, and should be discouraged whenever opportunity affords, as many a membrana tympani has been ruptured in this manner, and followed by an acute otitis media, often of much severity. In reference to the treatment of otitis media, the author says, if the infant or child is brought in with an earache, and inspection shows the membrana tympani a deep red color with the lustre absent, the chances of resolution are not good, and free incision followed by antiseptic douching will usually be followed by prompt relief from pain, and speedy return to normal conditions. Should the membrana tympani be but moderately red, and the lustre still intact, the use of hot irrigations will often abort the disease, particularly if a free purgation be given.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of April 18, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair.

The Use of Radium Emanations in Internal Medicine.—This paper was read by Dr. S. Wachsmann. After referring to the extensive use of natural mineral waters, particularly in Europe, he said that some better understanding of their effects seemed to be dawning upon us since the very important discovery of the radioactivity in the waters of various spas. The first of these in which the property was demonstrated were the springs of Gastein, in the Tyrol. This discovery threw a new light on the difference in action between the waters when taken immediately from the springs and when shipped in bottles for long distances. Under the latter circumstances, although their chemical composition might not have changed materially, they certainly had lost their radioactivity, since we know that the emanations were so unstable as to disappear within a few days. Emanations, varying in degree, had been found in all natural mineral waters so far examined. There was, however, no definite relation between the quantity of emanations and the general therapeutic efficiency of the waters, and the reason for this was to be attributed to various physical properties, such as temperature, amount of carbonic acid gas and sodium chloride, etc. The emanations, so named by Rutherford, were a gas and followed the physical laws of gases in every respect, and they were given off by all radioactive substances, such as radium, uranium, actinium, and polonium. As a rule they were invisible, but under favorable circumstances might be seen in the dark as a luminous mist. They produced alpha rays, and in four days, at the most, lost about one half their activity and gradually changed into radium A, then into radium B, then into radium C, finally losing their activity entirely. Emanations absorbed in water would escape upon shaking, and this was another reason why it was impossible to transport natural or artificial radioactive waters for any great distance without impairment of their activity. The activity of emanations was best measured by a special electroscope, the fontactoscope of Engler and Sieve-King.

The utility of the emanations in a therapeutic way was along different lines from that of radium itself, being apparently destined to produce good results in internal and nervous diseases, for the relief of which the different spas were usually visited. When it became regarded as probable that the emanations were the essential feature of the natural mineral waters, it was but logical to attempt to imitate Nature's process and to apply various substances affording radium emanations internally or in the shape of baths. It was Neusser, of Vienna, who, as early as 1905, first prepared a radioactive water by treating water with pitchblende. Morton, of New York, also made use of a radioactive water sometimes called "liquid sunshine." Various attempts were made also to charge solid or pulverized substances with radium emanations, in order to facilitate their transportation without loss of power, and in Europe a number of such preparations are now on the market.

He had begun employing radioactive water in August, 1909, on patients in the Montefiore Home, and his experience with this medication had been in accordance with the results reported abroad in some respects, while in others it differed. If it was not possible to prove the radioactivity of the water by means of the electroscope, its nature would become apparent from the so called reaction upon the patient, which was similar to the one observed in the different water cures at Gastein, Baden Baden, Carlsbad, etc.; and from this similarity it might be justifiable also to expect results like those obtained from the springs. The reaction referred to consisted in an increase of pain wherever it had existed previously and the occurrence of pain in parts from which it had disappeared or where it had never been felt before. Another manifestation of the reaction was a peculiar feeling of buoyancy and rejuvenation, and this also he had observed in a number of his cases. It was well known that Gastein had for many years had the reputation of restoring youth to a certain extent, and that a number of European monarchs of advanced years had been in the habit of using the Gastein waters. He had never observed albuminuria after the taking of radium water, as had been reported by some clinicians abroad, but a tendency toward the production of hæmorrhages, which had also been reported, he could confirm. In a few cases of carcinoma in which he had employed it, though without any beneficial effect, it had been necessary to discontinue the treatment on account of this action. The water was given, undiluted, as soon as possible after being drawn from the apparatus, in doses of 5,000 to 10,000 units, from one to three times a day, or was administered in the shape of baths containing 100,000 units. One effect of the radium water, observed in a number of instances, was a stimulating action on the bowels, and seven patients who had been costive for years reported that since taking the water their bowels had become regular. Diarrhœa was produced in but one case.

The original indications for the use of radium emanations had been of the same character as those for the waters of Gastein and similar springs, namely, articular affections of various types. Unfortunately, his own observations in such affections had been confined to the worst forms of these, with the smallest prospect of relief, on account of the long duration of the disease. All the patients were suffering from long continued chronic diseases, and most of the articular cases belonged to the deforming type. The results of the radium treatment, therefore, had not been so satisfactory as might have been wished for. The typical reaction of pain, however, was clearly in evidence, and after this subsided there had ensued a feeling of strength and vigor such as the patients had not experienced for years. They all felt relieved, at least temporarily, but had relapsed when the treatment was discontinued, again improving somewhat when it was resumed. Since we did not so far know of any other remedy which had a well marked effect upon arthritis deformans, we had to recognize the distinct influence of radium in this disease. He felt confident that if this class of cases could be treated in their incipiency with radium water, given internally or as baths, good results might be looked for. In four cases of acute muscular rheumatism (lumbago) the pain ceased promptly after a few doses of the water. In two cases of very obstinate asthma radium emanations given by means of an ordinary steam atomizer had produced only temporary relief. Reports from Germany, however, mentioned very gratifying results in numerous cases of asthma, bronchitis, ozæna, sinus catarrhs, etc. There a special apparatus was employed, the emanations being driven out of the water by gentle boiling and inhaled dry, without the entrance of the steam into the respiratory tract. In cases of cystitis much relief was afforded by the radium, which was shown to be excreted in the urine. In tabes, both the shooting pains and the crises yielded to the radium water, given in doses of 10,000 units for a period of thirty days. Only four out of nineteen patients were not benefited, and it was quite possible that these, too, would have been improved had the treatment not been discontinued, at the request of the patients, on account of the somewhat painful reaction at the beginning of the medication. There was such a large variety of diseases amenable to treatment at watering places with mineral springs that it was necessary to investigate the true causes of the efficiency of such springs and find out how much depended on the presence of radium emanations, so that these waters might be most successfully imitated artificially.

Dr. SAMUEL G. TRACY said that he took up the study of radium when it first became known, in 1903, and in February, 1904, had published a paper in the *New York Medical Journal* in which he described his experience with radioactive solutions in fermentative dyspepsia, syphilis, and various other conditions. The results obtained were not very marked, however, for at that time he was not aware of the loss of potency in such preparations by their being kept. In the treatment of asthma he used radium in the form of a gas prepared by means of chlorine. He was convinced that in radium there were great possibilities in the field of internal medicine.

Dr. WACHSMANN said he did not know of Dr. Tracy's paper, published in 1904, or he would certainly have given him credit for his early investigations.

ALCOHOLISM IN WOMEN.

In its Medicolegal Aspects.—The first paper, by Dr. G. ALFRED LAWRENCE, discussed this phase of the subject. The greater susceptibility of women to the baneful effects of the excessive use of alcohol, he said, was generally recognized, and it was also well known that alcoholism was one of the most pernicious factors in the production of defective offspring. When we stopped to consider the vast sums expended for drink and the resulting incapacity of the drinker, we were brought to a still keener realization of the immenseness of the problem before us. In the United States alone in the year 1905 $1,325,434,514 was spent for liquor, and 1,500,000 men and women were daily incapacitated for work, involving a total cost, due to alcohol, of over $3,000,000,000. When we added to this the ill health produced in these men and women individually and the impairment in the quality of their children, such an enormous economic loss was startling to the serious thinker. Dr. Mabon had shown that at the Manhattan State Hospital, out of 336 cases of insanity in women resulting from physical causes, twenty-five per cent. were due to alcohol alone and thirty-three per cent. to alcohol combined with other causes. Having presented other similar statistics, the speaker said that in his last annual report Dr. Ferris, president of the New York State Commission in Lunacy, had stated that in both the State and private hospitals, with a total of 31,541 patients, next to heredity, the use of alcoholic intoxicants was the most potent cause of insanity. Furthermore, it was an entirely avoidable cause, and the State had to deal not only with the dependent alcoholics, but also with their defective descendants.

All this showed the ramifications of this habit or disease into every part of the social fabric, and the necessity of the most careful medicolegal control of the vast army of irresponsible inebriates. It had long been recognized by the medical profession that most of these persons were suffering from a distinct disease or symptom complex, known as inebriety in its various forms, and the medicolegal aspects of the subject could perhaps be best taken up under three headings: (1) The legal restriction of the sale of alcoholic stimulants to the inebriate; (2) the medicolegal responsibility of the female alcoholic; (3) the medicolegal care of the woman inebriate. At present any woman having the necessary money could secure any amount of alcoholic stimulants during the hours prescribed by the excise laws, at a grocery store, at a liquor saloon, or upon a physician's prescription at a drug store. The anomalous situation was presented that she was practically debarred from purchasing her supply in the place where the greatest purity and best quality of liquor was assured, the drug store, while in the lowest grog shop, where she might receive the vilest and most dangerous adulterations of alcoholic beverages, including practically pure wood alcohol, she could obtain unlimited quantities. A prominent New York physician had told him not long ago that he had by telephone requested one of the largest and best known grocery establishments in the city to sell no more alcoholic liquors to a female member of his own family. The reply he received was that the firm would continue to sell and deliver to this woman in his own house whatever quantities of liquor, and at whatever time, she might order, so long as she continued to pay their bills, regardless of his wishes in the matter. If the strictest legal measures were enacted to prevent the sale of morphine, cocaine, and other poisonous drugs, how much greater care ought to be taken in regard to the sale of alcoholic stimulants to the inebriate. Dr. Lawrence advocated the prohibition by law of such sales, and quoted the terms of a law of this kind which had been in force for the last twelve years in New South Wales. Such a measure, he said, would naturally meet with much opposition, and the carrying out of its povisions would be attended with many difficulties in a great city like New York, but, nevertheless, he believed it would be possible to enforce it. If so, it would be a preventive measure of the greatest possible value, and one which would prove of material assistance in the solution of the alcoholic problem.

The present laws pertaining to the medicolegal responsibility of the female alcoholic were far from satisfactory, and ought to be revised so as to conform to the medical advance in knowledge of the various disordered states presented by the alcoholic. As it was now, the legal recognition of inebriety was largely taken up with the disposal of the woman after she had lapsed into a criminal offender, and was punitive in character. When she had committed any offense she was in most cases held fully responsible, and not infrequently a more severe penalty was awarded her than if the act had been done by a nonalcoholic, although from a strictly medical standpoint she might be entirely irresponsible. In some murder cases, however, when the degree of intoxication had been proved to be so great that the subject was unable to form a wilful, deliberate, and premeditated design to kill, or to appreciate the legitimate consequences of the act, murder in the second degree, instead of the first, had been the verdict. If the party intentionally became intoxicated for the purpose of killing another, the intoxication would have no effect in mitigating the legal penalty. If any person got a woman drunk and persuaded her to commit a crime, the former, not the drunken woman, was held responsible for the act, provided such circumstances could be proved. In arson inebriety was considered no defense, and the same was true as against an innocent purchaser for value in all negotiable instruments. The female inebriate's contracts were not void, but voidable only, and this included marriage. In the case of divorce the law varied in different States, and in some inebriety was recognized as a cause for divorce. In many, a legal separation might be secured on the ground of habitual drunkenness, especially if it could be shown that the life, limb, or health of the husband was endangered. In the case of wills, if the testatrix was unconscious of the nature of her acts or incapable of resisting the influence of others, it voided the will. In torts, drunkenness would be no defense to the mitigation of damages, and in the laws on insurance inebriety was regarded as a habit, not a disease. In the eye of the law a woman might be held responsible for her acts, while from a medical point of view she was entirely irresponsible. All questions of responsibility in the case of inebriate women, the speaker believed, should be referred for decision to one or more physicians who were specialists in inebrity, acting as an impartial commission. Such physicians should not be employed by either side, and they could be made officers of the court, rendering their report directly to the judge, and under seal, if desired.

Taking up the third division of the subject, he described the present inadequate methods of dealing with the inebriate woman, which treated her as a criminal and not as a diseased individual. They had, he said, many glaring defects and also ininvolved an enormous amount of expense and economic loss, since a large percentage of the cost of the police force, the magistrates' courts, and the city prisons, work house, and municipal hospitals was due to the chronic inebriate. In a city like New York the vast army of inebriates required custodial care under proper legal commitment and for a proper length of time, and during the past three years serious efforts had been made in this direction. Bills had been introduced into the legislature providing for appropriations for the establishment of a suitable board of inebrity, which should have general control of the problem of dealing with public intoxication, and also for the establishment of a duly equipped hospital and colony for the care of such cases under proper commitment. No action of this character, however, had as yet been taken. Such adequate provisions, it was true, would involve a large expenditure of money, but the amount, no matter how great, would be entirely insignificant compared with the economic saving to the commonwealth at present, while their beneficial effects upon future generations would be incalculable.

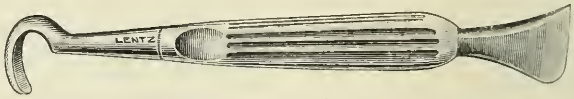
(*To be concluded.*)

New Inventions.

A COSTAL PERIOSTEOTOME.

By W. WAYNE BABCOCK, M. D.,
Philadelphia.

This periosteotome is designed to facilitate the rapid separation of the rib from the periosteum without wounding the pleura or the intercostal vessels. It is a more powerful instrument than that of Doyen, and the length and curve of the blade are such that the instrument may be quickly applied or removed without including the adjacent soft tissues. In applying the periosteotome the rib is exposed and the overlying periosteum incised and pushed back by the heavy knifelike end of the instrument until an edge of the rib is freed. The curved end of the instrument is then slipped between the periosteum and rib hugging the posterior surface of the bone until the point emerges at the opposite edge of the rib. The handle of the instrument is then firmly grasped and the periosteotome pushed or pulled along the rib instantly freeing the bone from the periosteum for any length desired. Leaving the instrument in place, by traction upon the handle, the rib may be lifted, facilitating the application of rib shears or bone forceps. Having divided the rib external to the periosteotome, the instrument may be slipped back to the other point selected, and the rib elevated and supported as the rib shears are again employed. In this manner a number of ribs may be freed from the periosteum and divided with the greatest rapidity without injury to the pleura or to the intercostal vessels. In Freund's operation and in Quincke's mobilization of the chest wall over tuberculous cavities the instrument is especially helpful, expediting the operative procedure and decreasing the danger of accidental pneumothorax or hæmorrhage. For the removal of segments of rib or costal cartilage for purposes of grafting, as a guide and retractor during the division of the bone in anterior mediastinotomy and in separating the periosteum from the under surface of the sternum I also have found the instrument of value.



Babcock's costal periosteotome.

2033 WALNUT STREET.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Professor Dr. CARL VON NOORDEN, Professor of the First Medical Clinic, Vienna. Part VIII. Inanition and Fattening Cures. Part IX. Technique of Reduction Cures and Gout. Authorized American Edition Edited and Translated under the Supervision of Alfred C. Croftan, M. D., Chicago, Ill. New York: E. B. Treat & Co., 1910. Pp.: Part VIII, 103; Part IX, 112. (Price, $1.50 each.)

In this monograph the author advises that defective nutrition be treated by incorporating in the diet a caloric value adequate to maintain nutrition, the diet being so constituted that it will impose no excessive tasks upon parts that are functionally or organically impaired and will not directly or indirectly injure or overtax any portion of the body. He condemns routine of any sort, and advises that qualitative and quantitative regulations of diet be formulated, based upon physiological reasoning. Certain dietetic fallacies are justly criticised.

The most important fact in the treatment of obesity is the education of the patient, his peculiarities having been studied carefully, and the treatment having been arranged accordingly; so in the present volume the author advises a regimen based on the daily habits and surroundings of the patient.

In gout it is advised that the endogenous uric acid excretion be determined as a preliminary step; then the degree of exogenous uric acid excretion following the intake of a definite pabulum must be studied and compared with a calculated normal, and the diet arranged accordingly. An index would add to the value of each of these volumes.

Epidemische Kinderlähmung. Bericht des Komitees für die Sammelforschung bei der New Yorker Epidemie von 1907. Autorisierte deutsche Ausgabe von Dr. MAX KÄRCHER, Assistenzarzt an der medizinischen Universitätspoliklinik in Bonn. Mit einleitenden und ergänzenden Bemerkungen von Dr. PAUL KRAUSE, o.ö. Professor an der Universität Bonn, Direktor der medizinischen Poliklinik. Mit 3 Tafeln, 3 Kurven und 4 Uebersichtskarten. Jena: Gustav Fischer, 1910. Pp. 123.

We are accustomed to see American translations of German books, but seldom find the reverse. The book before us is a very good translation of the report of the New York epidemic of poliomyelitis of 1907 made by an investigating committee, the original of which we reviewed in our issue of June 25, 1910 (p. 1361). The translator is to be congratulated upon his work, which is in every respect excellent, and the publishers have done their part toward making the book very acceptable.

Professor Krause, in his preface, mentions the literature of infantile paralysis. We thus see that Harvitz and Scheel, of Christiania, wrote an essay on the anatomical side of the Norwegian epidemic, Ivar Wickman, of Stockholm, contributed two books on the clinical and epidemiological aspects as seen in Sweden, and E. Müller, of Marburg, described the Hessian epidemic. But, says Professor Krause, in none of these books do we find such a complete review of the clinical and epidemiological features of the pathology, anatomy, ætiology, and treatment as in the American report.

Surgical After Treatment. A Manual of the Conduct of Surgical Convalescence. By L. R. G. GRANDON, A. M., M. D., Assistant in Surgery at Harvard Medical School, Assistant Visiting Surgeon to the Boston City Hospital, etc. With 265 Original Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 803. (Price, $6.)

This book has been written, the author states, for two classes of practitioners—hospital house surgeons and general practitioners in communities that are not surgical centres. The first part of the volume is devoted to the many details of after treatment in general, and the second part discusses special operative conditions. There is an excellent chapter by Dr. George P. Sanborn on therapeutic immunization and vaccine therapy. The volume is well illustrated, the descriptions are clear and concise, and the work is well adapted to the purpose for which it has been prepared.

The Pathology of the Living and Other Essays. By G. A. MOYNIHAN, M. S. (Lond.), F. R. C. S., Leeds. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 206.

This volume includes a number of essays that have appeared in various medical journals in recent years. In the first essay, which gives the volume its name, the author urges that all practitioners should follow their patients to the operating table, as the lessons there learned will be of value in practice beyond all reckoning. An address on inaugural symptoms advises that a knowledge of the earlier phases of disease will come if there is a closer and more intimate examination of the anamnesis, followed by a precise investigation of the part affected during the patient's life. An essay on gastroenterostomy summarizes the author's experience in this operation, and so do one on cancer of the stomach and one on the surgery of the common bile duct. The other papers are on the operative treatment of obstructive jaundice, on the violation of Courvoisier's law, on the mimicry of malignant disease in the large intestine, and on the surgical treatment of cancer of the sigmoid flexure and rectum. The author is a careful student and his experience is presented in an attractive style.

MEDICOLITERARY NOTES

There is apparently a good deal of derogatory criticism of our jails by the inmates, although those who have traveled are said to consider them superior from every æsthetic point of view to the European establishments. Prison As I Found It, in the September *Century*, by the modestly pseudonymous "John Carter," being as impartial a discussion as could be expected, deserves attention from physicians, as the care of criminals will sooner or later fall into the hands of alienists, where it belongs. One grievance of Carter's will meet with sympathy from very few, but with those few it will be deep; he complains of the poor taste in music of the average convict, of the lack of opportunity for individual practice, and of the consequent awful results when the orchestra got together. Imagine being forced to listen to the miscalled German bands—so first named in Great Britain, we believe—without hope, for a solid hour twice weekly.

* * *

Exconvict No. 7654, in The Gray Brotherhood of Infamy, a story in the October *Cosmopolitan,* writes of his personal experiences in Sing Sing and Dannemora. It is very unpleasant to be a prisoner, but, notwithstanding the dirt, vermin, and severe discipline, it is the mental suffering that is worst. There seems to be no good reason why good coffee should not be served, for the best with cream and sugar can be supplied at less than two cents a cup. Clean cells, well aired, are within easy reach, too. Judging from the experience of 7654, there is extraordinary and uncalled for brutality in the treatment of a suspect before his trial. No. 7654 has since his release done very well, having secured a position in a large manufacturing establishment with every chance of advancement.

* * *

Many convicts complain that imprisonment prevents their subsequent employment. This drawback is founded on the prolonged experience of normal society. The more one studies crime and criminals the clearer it appears that crime is a sort of bad habit like drink, narcomania, and gambling, all of which seize with irresistible force on a certain weak type of character. No employer wants a race track habitué or a periodical drinker among his help, for the same reasons precisely that he does not want a convicted criminal. The steady, monochrome life of the average man cannot hold gambler, dope, or criminal, who demands the resistless anæsthesia of his favorite vice. How often are the three failings combined; the crook is almost invariably gambler and opium pipe smoker. The only cure for any phase of the peculiar degeneracy of the criminal is prolonged sequestration, but that should be under medical auspices. A complete mental and physical revolution must be accomplished. Sometimes this is achieved instantaneously, as in religious missions, but not often. No. 7654, of the October *Cosmopolitan,* was a first offender. He should never have been in either Sing Sing or Dannemora, and it is fair and fortunate that he should have another chance.

* * *

Careful perusal of the September issue of the *National Food Magazine,* under whose auspices the recent exposition of domestic science was held at Madison Square Garden, seems to demonstrate that it is published in the sole interests of the consumer. The names of food adulterators are given; the suppression of these names, customary in the hurried daily news, renders the stories of their misdemeanors useless to safeguard the public. Food is discussed, so to speak, *ab ovo et a semine,* and one may learn how to grow much of it one's self. The vast importance of pure food to young children is dwelt upon. The whole number is interesting to all but devotees of the recent cult of fasting.

* * *

Great astonishment has been expressed in various quarters at the ability to speak intelligible English evinced by a college president recently nominated for high office. Why not express astonishment at his general intelligence? Every clear thinker speaks and writes clearly. The muddy rhetoric and vague sentences come from the pseudoscientists, leaders of the strange mental cults. There is no better and simpler English than that of Huxley, typical man of science.

NEW PUBLICATIONS.

Bresler, Johannes.—Die Syphilisbehandlung mit dem Ehrlich-Hata'schen Mittel (Dioxydiamidoarsenobenzol). Zusammenstellung der bisherigen Erfahrungen. Zweite, bedeutend vermehrte Auflage. Mit den Bildnissen von Ehrlich und Schaudinn. Halle a.S.: Carl Marhold, 1910. Pp. 65.

Jessner, S.—Die innere Behandlung von Hautleiden. Dritte Auflage. Würzburg: Curt Kabitzsch, 1910. Pp. 49.

Schmidt, A., und Strasburger, J.—Die Fäzes des Menschen im normalen und krankhaften Zustande mit besonderer Berücksichtigung der klinischen Untersuchungsmethoden. Dritte, neu bearbeitete und erweiterte Auflage. Mit 15 lithographischen Tafeln und 16 Figuren im Text. Berlin: August Hirschwald, 1910. Pp. xi-427.

von Linné, Carl.—Bref och Skrifvelser af och till Carl von Linné. Första Afdelningen. Del IV. Stockholm: Aktiebolaget Ljus, 1910. Pp. 367.

Motter, Murray Galt, and Wilbert, Martin I.—Digest of Comments of the Pharmacopœia of the United States of America (Eighth Decennial Revision), and the National Formulary (Third Edition). For the Calendar Year ending December 31, 1907. Hygienic Laboratory Bulletin No. 63. Washington, D. C.: Government Printing Office, 1910. Pp. 464.

Annual Report of the Department of Health of the City of Buffalo, N. Y., for the Year ending December 31, 1909. Pp. 104.

Adami, J. George.—The Principles of Pathology. Volume I. General Pathology. Second Edition, Revised and Enlarged, with Three Hundred and Twenty-nine Engravings and Eighteen Plates. Philadelphia and New York: Lea & Febiger, 1910. Pp. xviii-1027. (Price, $6.)

Mumford, James Gregory.—The Practice of Surgery. With 682 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 1015. (Price, $7.)

Von Frisch, A.—Die Krankheiten der Prostata. Zweite, umgearbeitete und vermehrte Auflage. Wien und Leipzig: Alfred Hölder, 1910. Pp. v-305.

Talmey, Max.—Psyche. A Concise and Easily Comprehensible Treatise on the Elements of Psychiatry and Psychology. For students of Medicine and Law. New York: The Medicolegal Publishing Company, 1910. Pp. viii-282. (Price, $2.50.)

Robinson, William J.—Never Told Tales. Third Edition. The Altrurians, 1910. Pp. 155. (Price, $1.)

Finger, E., Jadassohn, J., Ehrmann, S., und Gross, S.—Handbuch der Geschlechtskrankheiten unter Mitarbeit von Prof. G. Alexander, Wien; Prof. D. K. Benda, Berlin; Prof. Dr A. Blaschko, Berlin, et al. I. Lieferung. I. Band, Bogen 1-10. Wien und Leipzig: Alfred Hölder, 1910. Pp. 160.

Miscellany.

Cebu.—In a letter received from Colonel Woodruff, now stationed in Cebu, we find the following interesting passages:

> Cebu is not bad. We find the climate really good—for the tropics—and the nights are "sleepable." There is a lot of business done here and we are to be the military centre for the Southern Islands. Hemp, copra, and sugar go from here weekly by the thousands of tons straight for New York. The island is thickly settled and highly cultivated, raising more corn than any other place. The luscious mangoes are worth a trip here merely to taste them. In a ride across the island I was struck by the

fact that many of the country folks resembled Hindoos—long face and head, very dark skin, oily manners, and industrious to a degree as well as lacking all feelings of independence, so vastly different from the fierce Moros of the south. I concluded they were Indians and later found that the Portuguese had brought hundreds of shiploads of slaves from India, from 1570 for fifty years or more, and sold them to the Spaniards. As these Indian types are descendants of the Mediterranean race which had percolated as far east as India several thousand years ago, we have real Europeans among Filipinos, and we are more nearly brothers than to the Alpine stock in Europe. What a curious thing anthropology shows that we have little "brown brothers" here, after all.

I am fascinated by the historical side of Cebu. It was here that the Portuguese Magellan landed after his long trip around South America. He first stopped at an island south of Samar and then came here, but was soon killed by the natives at a spot on an island in the harbor now marked by a monument. Only one of his five ships got back to Spain. There was a high civilization here then, with reading and writing, agriculture highly developed, commerce, etc. It would have been a big nation but for the isolation of island life. A university was soon started here in Cebu by the Spaniards, and it is still running. It dates back farther than Harvard.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the Surgeon General of the United States Public Health and Marine Hospital Service for the week ending October 7, 1910:

Cholera—Foreign.

Place.	Date.	Cases.	Deaths.
Arabia—Matrah	Sept. 29		Present
Austria-Hungary—Gonoyo	Sept. 3-6	1	1
Austria-Hungary—Mohacs	Aug. 25-26	1	1
Austria-Hungary—Nagybajcs	Sept. 7	1	1
Austria-Hungary—Pozsony	Aug. 24-30	1	1
Austria-Hungary—Vienna	Sept. 4-10	3	1
Austria-Hungary—Vorosmarton	Aug. 14-30	1	1
India—Bombay	Aug. 24-30		2
India—Calcutta	Aug. 7-13		13
India—Madras	Aug. 20-26		16
India—Rangoon	Aug. 14-20		1
Italy—Apulia, department—Province of Bari—Andria	Sept. 4-10	4	
Italy—Barletta	Sept. 4-10	34	16
Italy—Canosa	Sept. 4-10	3	
Italy—Molfetta	Sept 4-10	9	6
Italy—Margherita di Savoia	Sept. 4-10	5	9
Italy—Ortanova	Sept. 4-10	3	2
Italy—Province of Foggia—Cerignola	Sept. 4-10	6	5
Italy—Sardinia	Oct. 3	4	1
Italy—San Ferdinando	Sept. 4-10	4	3
Italy—Trani	Sept. 4-10	2	4
Italy—Trinitapoli	Sept. 4-10	22	14
Java—Batavia	Aug. 14-20	16	7
Korea—Chinampo	Aug. 26-27	2	1
Manchuria—Dalny	Aug. 21-27	2	1
Russia—General	Aug. 21-27	12,510	6,376
Russia—Akmolinsk, territory	Aug. 21-27	218	131
Russia—Astrakhan	Aug. 21-27	122	55
Russia—Baku	Aug. 21-27	91	56
Russia—Baku, prefecture	Aug. 21-27	81	46
Russia—Black Sea	Aug. 21-27	7	1
Russia—Cronstadt, city	Aug. 21-27	31	27
Russia—Daghestan, territory	Aug. 21-27	187	97
Russia—Don, territory	Aug. 21-27	1,038	538
Russia—Ekatherinoslaw	Aug. 21-27	822	533
Russia—Erivan	Aug. 21-27	205	65
Russia—Iaroslav	Aug. 21-27	137	86
Russia—Kazan	Aug. 21-27	293	137
Russia—Kars, territory	Aug. 21-27	167	72
Russia—Kertchienikale, prefecture	Aug. 21-27	6	
Russia—Kharkov	Aug. 21-27	50	23
Russia—Kherson	Aug. 21-27	564	243
Russia—Kief, government	Aug. 21-27	846	333
Russia—Kostroma	Aug. 21-27	234	158
Russia—Koursk	Aug. 21-27	284	147
Russia—Koutais	Aug. 21-27	48	29
Russia—Kuban, territory	Aug. 21-27	657	417
Russia—Minsk, government	Aug. 21-27	63	31
Russia—Mohiev, government	Aug. 21-27	22	8
Russia—Moscow	Aug. 21-27	45	12
Russia—Nijni-Novgorod	Aug. 21-27	115	50
Russia—Novgorod, government	Aug. 21-27	38	17
Russia—Odessa, prefecture	Aug. 21-27	19	23
Russia—Orel	Aug. 21-27	44	19
Russia—Oural, territory	Aug. 21-27	15	8
Russia—Orenbourg	Aug. 21-27	299	132
Russia—Perm	Aug. 21-27	59	29
Russia—Podolia, government	Aug. 21-27	89	46
Russia—Poltava	Aug. 21-27	163	69
Russia—Pskov, government	Aug. 21-27	1	
Russia—Riazan	Aug. 21-27	179	96
Russia—Rostoff-on-Don, prefecture	Aug. 21-27	48	15
Russia—Samara	Aug. 21-27	876	472
Russia—Saratov	Aug. 21-27	400	191
Russia—Sebastopol, prefecture	Aug. 21-27	4	2
Russia—Simhisak	Aug. 21-27	503	251
Russia—Smolensk, government	Aug. 21-27	10	5
Russia—St. Petersburg, city	Aug. 21-27	435	178
Russia—St. Petersburg, government	Aug. 21-27	68	37
Russia—Stavropol	Aug. 21-27	48	14
Russia—Syr-Daria, territory	Aug. 21-27	24	11
Russia—Tambov	Aug. 21-27	341	185
Russia—Tauride	Aug. 21-27	193	114
Russia—Tcherniga	Aug. 21-27	93	34
Russia—Terek, territory	Aug. 21-27	127	90
Russia—Tiflis	Aug. 21-27	243	85
Russia—Tomsk	Aug. 21-27	23	5
Russia—Tobolsk	Aug. 21-27	20	8
Russia—Tourga, territory	Aug. 21-27	18	10
Russia—Toula	Aug. 21-27	2	
Russia—Tver	Aug. 21-27	4	
Russia—Vitebsk, government	Aug. 21-27	20	2
Russia—Viatka	Aug. 21-27	22	8
Russia—Vologda, government	Aug. 21-27	42	23
Russia—Volynia, government	Aug. 21-27	1	1
Russia—Voronega	Aug. 21-27	1,706	801
Siam—Bangkok	July 19-Aug. 13	63	63
Straits Settlements—Singapore	Aug. 7-13	6	8

Yellow Fever—Foreign.

Place.	Date.	Cases.	Deaths.
Brazil—Manaos	Aug. 21-27	2	2
Brazil—Para	Sept. 4-10	8	4
Mexico—Campeche	Oct. 1	3	
Venezuela—Caracas	Sept. 17		Present

Plague—Foreign.

Place.	Date.	Cases.	Deaths.
Chile—General	Jan. 1-May 31	104	35
Chile—Iquique	Aug. 21-27	1	1
China—Chang Chow Fu. district	June 4		Epidemic
China—Hongkong	Aug. 7-13	1	1
India—Bombay	Aug. 24-30		25
India—Calcutta	Aug. 7-13		4
India—Kurrachee	Aug. 21-27	14	14
India—Rangoon	Aug. 14-20		19
Japan—Yokohama	Aug. 31	1	1
Mauritius	July 1-29	8	8
Russia—Moscow	Aug. 28-Sept. 3	1	
Russia—Odessa	Aug. 28-Sept. 10	30	8
Siam—Bangkok	July 19-Aug. 13	4	3

Smallpox—United States.

Place.	Date.	Cases.	Deaths.
Louisiana—New Orleans	Sept. 18-24	2	
Missouri—Kansas City	Aug. 6-20	4	
Montana—Butte	Aug. 1-31	3	
Montana—Dawson County	Aug. 1-31	2	
Montana—Rosebud County	Aug. 1-31	2	
Montana—Silverbow County	Aug. 1-31	1	
Utah—Salt Lake City	Aug. 1-31	3	
Utah—Utah County	Aug. 1-31	7	
Utah—Wasatch County	Aug. 1-31	1	

Smallpox—Foreign.

Place.	Date.	Cases.	Deaths.
Argentina—Rosario	July 1-31	2	2
Belgium—Antwerp	Sept. 4-10	1	
Belgium—Ghent	Sept. 4-10		1
Brazil—Manaos	Aug. 21-Sept. 3		Present
Brazil—Para	Sept. 4-10	3	
Canada—Halifax	Sept. 18-24	1	
Chile—Valparaiso	Aug. 28-Sept. 3	30	
China—Shanghai	Aug. 15-21	2	
Germany—General	Sept. 4-10	1	
India—Madras	Aug. 20-26		3
Java—Batavia	Aug. 14-20	1	
Mexico—Aguascalientes	Sept. 11-17		2
Netherlands—Rotterdam	Seot. 4-17		1
Portugal—Lisbon	Sept. 4-10	28	
Russia—Libau	Aug. 29-Sept. 4	1	
Russia—Moscow	Aug. 28-Sept. 3	5	
Russia—Riga	Sept. 6-10	15	
Russia—St. Petersburg	Aug. 14-Sept. 3	57	19
Siberia—Vladivostok	July 27-Aug. 13	3	1
Spain—Madrid	Aug. 1-31		3
Spain—Vigo	Sept. 12-18		2
Straits Settlements—Penang	Aug. 14-20	10	4
Straits Settlements—Singapore	Aug. 7-13	19	8
Zanzibar—Zanzibar	Aug. 1-21	30	16

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending October 5, 1910:

BANKS, CHARLES E., Surgeon. Directed to assume temporary charge at Portland (Quarantine), Maine, during the absence of Surgeon J. M. M. Eager.

BEAN, L. C., Acting Assistant Surgeon. Granted five days' leave of absence from October 1, 1910.

EAGER, J. M., Surgeon. Directed to proceed to Naples, Italy, upon special temporary duty.

Grubbs, S. B., Passed Assistant Surgeon. Granted fourteen days' leave of absence from September 25, 1910, on account of sickness.

Gustetter, A. L., Acting Assistant Surgeon. Granted six days' leave of absence from October 1, 1910.

Hallett, E. B., Acting Assistant Surgeon. Granted seven days' leave of absence from October 1, 1910.

Keen, W. H., Pharmacist. Granted seven days' leave of absence from September 10, 1910, under paragraph 210, Service Regulations.

Lavinder, C. H., Passed Assistant Surgeon. Granted seven days' leave of absence from October 1, 1910.

McClintic, T. B., Passed Assistant Surgeon. Granted seven days' leave of absence from September 28, 1910, under paragraph 191, Service Regulations.

McDaniel, S. K., Acting Assistant Surgeon. Granted fourteen days' leave of absence from October 18, 1910.

McLarty, A. A., Acting Assistant Surgeon. Granted seven days' leave of absence from October 3, 1910.

Nydegger, J. A., Surgeon. Detailed to represent the service at the meeting of the Medical Society of the State of Pennsylvania to be held in Pittsburgh, Pa., October 4 to 6, 1910.

Ott, C. R., Pharmacist. Granted twenty-nine days' leave of absence from October 11, 1910.

Porter, Joseph Y., Quarantine Inspector. Leave of absence for thirty days from September 20, 1910, revoked.

Rucker, W. C., Passed Assistant Surgeon. Directed to proceed to Elizabeth, N. J., upon special temporary duty; leave of absence for ten days from September 14, 1910, amended to read seven days from September 15, 1910.

Small, E. M., Acting Assistant Surgeon. Granted eight days' leave of absence from October 3, 1910.

Tappan, J. W., Acting Assistant Surgeon. Granted twenty days' leave of absence from October 1, 1910.

Townsend, F., Acting Assistant Surgeon. Granted four days' leave of absence from October 6, 1910.

Wetmore, W. O., Acting Assistant Surgeon. Granted one day's leave, September 19th, under paragraph 210, Service Regulations.

Board Convened.

Board of medical officers convened to meet at Stapleton, N. Y., October 7, 1910, for the purpose of making a physical examination of a cadet of the United States Revenue Cutter Service. Detail for the Board: Surgeon H. W. Austin, Chairman; Passed Assistant Surgeon W. A. Korn, Recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 8, 1910:

Brown, Polk D., Lieutenant, Medical Reserve Corps. Ordered to Fort Logan H. Roots, Arkansas, for duty during the absence on leave of Major Robert N. Winn, Medical Corps, which takes effect about October 1, 1910; September 28th, left Fort Sam Houston, Texas, en route to Fort Logan H. Roots for temporary duty.

Davis, William B., Colonel, Medical Corps. Granted leave of absence for two months with permission to visit China and Japan.

Ford, Joseph H., Major, Medical Corps. Relieved from duty at Fort Riley, Kansas, and ordered to Fort Wadsworth, N. Y.

Frick, Euclid B., Lieutenant Colonel, Medical Corps. Will take charge of the office of the medical superintendent, Army Trasport service, during the absence of Colonel H. S. T. Harris, at Camp Atascadero.

Gapen, Nelson, Captain, Medical Corps. Ordered to report on October 15, 1910, to the Commanding Officer, Army and Navy General Hospital, Hot Springs, Arkansas, for duty.

Hanson, Louis H., Captain, Medical Corps. Ordered to Fort Hamilton, N. Y., for duty upon being relieved by Captain Gapen.

Richards, Robert L., Captain, Medical Corps. Granted leave of absence for four months, with permission to go beyond the sea, effective about October 3, 1910.

Sherwood, John W., Lieutenant, Medical Reserve Corps. Will proceed to Fort Strong, Massachusetts, for temporary duty.

Wells, F. M., Lieutenant, Medical Reserve Corps. Granted leave of absence, for two months, to take effect about November 15th.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 8, 1910:

Casto, D. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from July 12, 1910.

Dennis, J. B., Surgeon. Detached from the *Virginia* and ordered to the navy yard, Philadelphia, Pa.

Gates, M. F., Surgeon. Detached from the navy yard, Philadelphia, Pa., and ordered to command the *Solace*.

Hart, S. D., Assistant Surgeon. Detached from the *Albany* and ordered to the naval station, Olongapo, P. I.

Hightower, C. T., Acting Assistant Surgeon. Resignation accepted, to take effect October 1, 1910.

Huff, E. P., Assistant Surgeon. Detached from the *New York* and ordered to the Naval Hospital, Canacao, P. I.

Kennedy, J. T., Surgeon. Detached from the *Indiana* and ordered to the *Louisiana*.

Lawrence, H. F., Assistant Surgeon. Ordered to Washington, D. C., for examination for promotion, and then to await orders.

Ohnesorg, K., Surgeon. Detached from the *Louisiana* and ordered to the *Virginia*.

Pickrell, G., Surgeon. Detached from command of the *Solace* and ordered home to await orders.

Pratt, R. B., Acting Assistant Surgeon. Detached from instruction at the Naval Medical School, Washington, D. C., and ordered to the marine recruiting station, Philadelphia, Pa.

Scott, T. W., Pharmacist. Ordered to duty at the Naval Medical Supply Depot, Brooklyn, N. Y.

Wickes, G. L., Passed Assistant Surgeon. Ordered to the *New York*.

◆

Births, Marriages, and Deaths.

Born.

Porter.—In San Juan, Puerto Rico, on Wednesday, September 28th, to Passed Assistant Surgeon Frederick E. Porter, United States Navy, and Mrs. Porter, a daughter.

Married.

Aye.—Tassay.—In Kittanning, Pennsylvania, on Wednesday, October 5th, Dr. Thomas L. Aye and Miss Genevieve Tassay.

Drayton.—Dunnng.—In West Chester, Pennsylvania, on Saturday, October 8th, Dr. William Drayton, Jr., and Miss Frances Dunning.

Died.

Billington.—In Syracuse, N. Y., on Monday, October 3d, Dr. Chauncey E. Billington, aged sixty-two years.

Brem.—In Charlotte, N. C., on Friday, September 30th, Dr. Charles Brem.

Coburn.—In Troy, N. Y., on Tuesday, October 4th, Dr. Edward S. Coburn, aged seventy years.

Heavrin.—In Hawesville, Kentucky, on Saturday, October 1st, Dr. J. H. Heavrin, aged forty-eight years

Hinson.—In Saratoga Springs, on Tuesday, October 4th, Dr. Jacob Miller Hinson, aged forty-five years.

Lower.—In Cleveland, Ohio, on Thursday, September 29th, Dr. Frank H. Lower, aged forty-one years.

Merkley.—In Gouverneur, N. Y., on Sunday, October 2d, Dr. Ellis A. Merkley, aged forty years.

Riley.—In Algiers, Louisiana, on Friday, September 30th, Dr. William H. Riley, aged seventy-two years.

Saunders.—In La Plata, Maryland, on Thursday, October 6th, Dr. William N. Saunders.

Smith.—In Lake Charles, Louisiana, on Monday, October 3d, Dr. Temple B. Smith, aged forty-six years.

Snoddy.—In Warrensburg, Missouri, on Friday, September 30th, Dr. W. D. Snoddy, aged eighty-eight years.

Von Leyden.—In Berlin, on Wednesday, October 5th, Dr. Ernst von Leyden, aged seventy-eight years.

Witter.—In San José, California, on Sunday, October 2d, Dr. George F. Witter, aged eighty years.

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THE DISCARD HEAP—NEURASTHENIA.

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Were Addison to contribute for a twentieth century public his essay upon infirmities discarded but dear to their owners, love of truth might drive him to indicate differently the composition of his "mountain of miseries" where all were bodily deformities. It is quite certain that he would now disregard these material anomalies and disorders, in their place heaping "as high as a tall man's chin" subjective insufficiency, phobias, obsessions, rhachialgias, psychic obnubilations. Were his humor still kindly and illuminating, it is not impossible that before this "kitchin middy" of mental deposits he might substitute for the anachronistic "fancy" our more modern prophets of Christian Science and Emanuelism warning mortals against their renunciations, the sister proclaiming all an error erasable by belief in the mother, the clerical brother insisting upon the origin of our difficulties from a "disaggregation of personality," demonstrable to the simplest mind and open to fusion in its former continuity by the calories of an ecclesiatical hand.

Addison cannot be recalled nor a new essay evoked; the physician views Christian Science and Emanuelism with a traditional amblyopia and tolerance; there remains only the concept of neurasthenia as our particular "mountain of misery," the grandest of our modern discard heaps. For us it extends beyond Addison's limits; it stands for accumulations of diagnostic discards; discards of the physician, weary as his patient in holding to a thing or state which refuses a name. Because man is an instinctive nominalist, into the neurasthenias the case is thrown. Yet, for the moment, the essential thing is not so much the name of the heap; it is the size. This means a tremendous production, the presence of some facts or factors with a very considerable range of action, capable of producing a mass of cases with some similitude one to another, with some trace of common family feature. Turning the back upon specific producing factor, let the material mass of this group fix the eye. One fails of the sensations belonging to Solomon in looking upon the lily. There are lacking any clear outlines; the mass is diffuse and extreme. Scan over the diagnoses of an active neurological clinic; neurasthenia under various aliases is fairly spattered over the page. Nor in private work does it require more than an undue emphasis by the patient upon many symptoms to elicit "also a neurasthenic." Of the Emanuelists it is the favored child. To the public it is as familiar as conservation or the tariff. It permeates all walks of life nor is the most humble visiting list without its representatives. There is no question as to the mass; with the name there is much and upon this the present paper turns, as the definition of these aggregated discards must rest upon their separation into smaller and clearer entities through an analysis of composition and by the aid of distinguishing terms intended to convey distinctions of meaning.

As a generic term, neurasthenia is proper; historically the approach to it is clear. It had been evolved from a fairly definite concept of a primary nervous fatigue as the central point. As a caption the term instantly fitted; also it generalized in the best way one of the chiefest manifestations, developing some sort of a reasonable arrangement of other symptoms in relation to this point. Because of this the contribution was notable; before Beard, Hirsch had produced his "spinal neuroses," Romberg had described a "psychic hyperæsthesia," Krieshaber had named one group "cérébro-cardiaque," another "cérébro-neurasthénique." All of these had the varied elements of Beard's but with no generalizations and no adhesive name nor insignia that one who ran might read.

The new construction was timely and fit for that period of development of the concept; yet it will be seen that the happiness and fitness of this term has not served so well us, the later ones. It has become quite too comfortable, like Kant's easy chair in which one may sit and gently slumber. The fixity of the name has tended to limit our concepts or to make them less adaptable to new lines of direction which have gradually become effective in producing a splitting, partitioning within the mass. We still try to see in neurasthenia, the concept of thirty years ago, a considerable number of recent pictures, widely dissimilar. The net result is a distorted mental image. The most ready method of getting a decent focus in clearing up this distortion is to follow briefly the varied lines of divergence in the consideration of neurasthenia since Beard's time.

These different lines may be designated roughly as anatomical, physiological, psychological, and clinical. All interweave, but especially the three latter. The anatomical deserves but brief notice and is chiefly interesting by reason of its having dominated and restricted other more fertile concepts for some considerable time. It had really given the characteristic tone to certain of those classifications

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referred to as antedating Beard's work. Later it reappeared under such subclasses as splanchnic, spinal, visceral neurasthenias. In a vague way this anatomical partitioning had a relationship to a pathology inferred from the complex of symptoms.

A richer territory was opened by physiology, yet with early departures promising little. They largely comprised theories based upon disturbances in circulation but not connected, as at the present moment, with any deeper relations. Beard's contribution was built upon physiological laws applying rather exclusively to the nervous system. His concept was one of exhaustion in the nerve cell, and upon this his later contributions rested. In large part this condition was premised as primary, arising from a specific change in the cell itself due to fatigue; it was not his concept of a nerve cell in a secondary way refracting pathological rays produced by disturbances elsewhere within the body; it was limited to the cell. The process was a nutritional imbalance of some kind, but the chemistry and cytology of that day could give little defining light. Out of this obscurity there grew weird speculations as to "disaggregated tendencies" within the cell body, diminution in "vibratility," conditions of "cell hypovitality."

The essential and isolated fatigue process of the nerve cell has been largely discredited; later laboratory work has shown a higher fatigue threshold than exists in the muscles. Yet this same work has demonstrated a wide variation among individual types when estimated by this criterion. This Beard implicitly expressed in a limited way. In all this it was his particular achievement to have drawn attention to the functioning of the central nervous system in a previously loosely conceived mass of cases. It was he who initiated the rich line of psychological inquiry, and out of his work has grown much of our later clinical differentiations.

The French tendency toward perfecting began to show itself within the decade after Beard's announcement. The direction was toward estimating the causation of the nerve cell fatigue against the acceptance of which as a primary, endogenous factor there showed much reluctance. The first field searched was the gastrointestinal. In the beginning a vagueness existed as to whether the resulting disturbance in nerve cell was due to direct effect produced upon the sympathetic by visceral changes or to a secondary toxæmia in the canal. Both of these theories have undergone modification or substitution, the former to a greater degree. In its particular place there has grown the general concept of nutritional damage to the nerve cell as due in considerable part to defect in gastric or intestinal function or to disturbances in general metabolism. The range of these defects is too vast to touch upon. It is only necessary to mention here the sentiment of a lessening rigidity in this concept, formerly necessitating a strict causative relation between the two factors. There is a tendency at present to view both functional variations as manifestations of some one more general operating agent.

The toxæmic theory has had a tremendous growth, in part due to a considerable bacteriological work since Metchnikoff brought the *Bacillus bulgaricus* into captivity and the smell of sour milk came to pervade the land. Herter's work upon different intoxicative types has been valuable. His clinical groupings evolved upon a toxæmic basis are unusually clear; added to this, the recognition of variability in secretory activity, resistance, and other factors.

Within the range of metabolism a large amount of work has been done; it is difficult to estimate because the correlations thus far are insufficient and uncertain. Yet out of it there have appeared several lines of direction which serve to make more definite the relations between general nutrition and nerve cell changes, furnishing a clearer chemical interpretation of what a given toxæmia may be. The physiology of the ductless glands, their interrelations, their essential and contributory toxæmias have been persistently although slowly developed. In an empirical way, much has been done in demonstrating relationships to neurotic states.

These, the chiefest of modern trends, have supplanted the older and nebulous theories having to do with physiological relations. Unlike the latter, they have been produced only as parts of general physiological extensions, not as isolated developments fitted to the neurasthenic picture. In itself this is the strongest demonstration possible of the change in attitude as to the concept of neurasthenia; it is no longer a special creation, a lonesome entity; rather it has been placed in a circle of vital physiological functions.

The featuring of an endogenous cell fatigue was immediately effective in stimulating psychological inquiry. There had been much of this antedating Beard, touching neurasthenia most closely in the work upon hypochondriasis. It is interesting to read these earlier contributions in a modern light; their astuteness and fitness are remarkable; in many instances there is needed but the name to complete a fairly full picture of neurasthenia.

The fatigue basis found the first measurable psychological quantity in the function of attention. This marks the first analytic work of the French school. There followed a resolving of the disease entity into its finer parts, the affective marks, the change in intellectual functions seen in the diminution of attention and perception, loss of reality, the volitional disorders, and other visible symbols. Much of this psychological work can only be viewed as formulating neurasthenia symptoms in terms of mind, in producing mental equations in place of impressions. This, although valuable, is insufficient and one sided. To be sure, a physiological basis was often assumed; but it is no more than an assumption to substantiate psychological theories. It is not sufficient to state that it is due to "physiological arrest" or "defect in vital functioning" or to "diminished cerebral tension." This obscures, not aids the psychological analysis. These might better stand by themselves, for, viewed psychologically, they are admirable analyses of the neurasthenic mental functioning. Yet the fascination for purity of form and outline has thus made for a lessened substantiality. Also it has encouraged other minds toward the expression of the weirdest of psychological expressions which serve only to throw up dust.

Freud has shown a strict conceptual psychology in his work upon neurasthenia. He sees the morbid process to rest either upon the insufficient, inadequate sexual reaction in masturbation as distinguished from the adequate reaction of intercourse or as due to an attempted exclusion even of a rudimentary mental elaboration of the sensory elements; in the one case, the reaction is inadequate; in the other case not only is the reaction suppressed but all mental trains relating to this are excluded. The former he distinguishes as the typical neurasthenia and to it attaches the train of neurasthenic marks; the latter he places as the prototype of the anxiety psychosis, related to but apart from the true neurasthenia. Nor is this application to neurasthenia isolated; it falls in with a full psychological construction based upon most acute sex studies with a definite concept of mental operation in this relation, extensively carried out into varied group of symptoms and massed about definite clinical types. It constitutes the most recent and important psychological advance in this field.

The penumbra of the psychological work can be filled in with the effusions of Dubois, the output of the Emanuel school and the varied emanations, neither psychological nor philosophical, which involve a loose analysis in their ill coordinated therapeutic procedures.

The clinical lines present both definite subdivisions and that which strictly amounts to differentiations. The latter have come into notice out of an effort to clean up the subject clinically; many of the older classes have been abandoned with their artificial topical outlines. The French and Germans early distinguished the constitutional and acquired neurasthenia. The distinction for a time rested upon difference in outcome or in the detection of a proximate ætiological factor rather than upon real differentials in clinical pictures. The constitutional form has now evolved into definite clinical shape. Acquired neurasthenia, however, is an ætiological generalization too diffuse for clinical use. It has been serviceable in making more clear the constitutional type; yet itself, as the major group, needs a considerable resolving. The chief attempts, thus far, have stopped short at ætiological lines. The multiplicity of groups, so constructed, have been compressed into a more general "physioneurasthenia." Over against this class other writers have contrasted that which they call "true neurasthenia," where the entire picture is psychological. The classification here seems to have depended largely upon the classifiers' particular penchant.

Janet evolved his psychasthenia from the neurasthenic mass; he views this form as an extreme degree of neurasthenia, where the arrest in function has gone far. Others look upon it as neurasthenia in the degeneratives. The Germans have raised many questions as to the essential clinical accuracy of the entity, seeing in it, as illustrated by Janet, possible approaches to the præcox forms.

Traumatic neurasthenia and senile neurasthenia are two groups retained in their old denominational form as a convenience; the former, by the usual disregard of antecedent states, and exaggeration of alleged proximate causes, has become less valuable; as to the latter, recent clinical studies quite as frequently tend to throw them from, as to include them within, the neurasthenic mass.

What have been termed differentials involve the isolation of certain psychoses from neurasthenia. Dana, in his Passing of Neurasthenia, early emphasized this. The work here has been chiefly clinical; it has resulted more from the study of early forms of these psychoses than from an analysis of neurasthenia. The manic depressive group, where rudimentary, has been shown to present a sufficiently close resemblance to the neurasthenic complex to warrant careful distinctions. This especially holds in the simple periodical depressive type where intensity is slight and recurrences are established. The French have called these "circular neurasthenia." The præcox group present certain light cases that have been thrown by a few observers into neurasthenia. Related to these and of greater importance are the constitutional inferiors; here the relation is more real and less forced. The neurasthenic coloring in some of the early paranoiac forms have raised the question of possible relationship, freshened by the present enlivening discussion of this latter psychosis. In other psychoses the presentation of a neurasthenic complex in the prodromes assumes a definite place in the general symptomatology.

When one, ever so briefly, goes over these physiological, psychological, and clinical lines splitting into the neurasthenia mass, there is a passing uncertainty as to whether neurasthenia is going, whether it has gone, or whether it is not really growing and waxing in stature at the present moment. Yet this confusion is not so inhibitory when one stops to estimate the human equation in it. The Latins gave Janus two faces, that man might learn to propitiate both sides against his innate tendency to see but one. Similar offerings might not be unsuitable to neurasthenia; which amounts to inferring that here also the south and north aspect are different. This is the first and considerable point. What mixes one is the fact that both sides look alike in our mental darkness. Yet consideration shows the existence of differences. So a part of the problem would seem to be an explanation of this similarity of appearance with an essential dissimilarity of causation. Yet this is less difficult because secondary to the clear resolution of the dissimilarities of causation which must be extracted out of the diffuse mass which has previously been considered. The most direct way of getting at the matter is to raise the question as to what is the operating tendency in neurasthenia; is it physiological or is it psychological or is it both? and, lastly, from these considerations what clinical types can be evolved with sufficient distinctness to make them of service?

An examination of the physiological field has shown a fairly definite relation, apparently causal, between certain known physiological disturbances and neurasthenic marks in the train of symptoms. Yet at the same moment, some attempt is to be made in escaping the cumbersome consequences of this detailing of implied relations in the matter of classification. Moreover, the fundamental question of operation as a generalization is overlooked unless some such change is made.

To respect this, one is forced to view the physiological operation either as one in which the neurasthenic marks are derivative to the disturbance, are frankly symptoms of this but not of neurasthenia or to view the neurasthenic mark and the physiological disturbance as both derived from a common constitutional inferiority, revealed by some chance exciting cause. This to some may amount to saying that many neurasthenias are not neurasthenias; to others it may be simply a restatement of the old division of acquired neurasthenia. The first supposition is largely correct; a vast number of so called neurasthenias are not at all neurasthenias; they are only so many different symptom groupings of some particular physiological disturbance. Nor should they be allowed the qualifying term of "secondaries," for there is implied here something more of a passing independence or claim to an entity than does the term "derived"; in this latter there is implied the existence of a connection. The term is borrowed from Janet, who used it to designate states which come into being as reductions, results of the diminished functioning on the higher levels, after this failure spreading itself into functions less complex and lower. In this light the neurasthenic marks are directly due to general reductions proceeding from varied physiological declinations, resulting in what is inaccurately described at fatigue. Janet's explanation, wherein it implies this hierarchy of mental functions involved according to rank, explains the progression of symptoms more definitely than does the self sufficient term of mental fatigue. This, of course, does not exclude fatigue as the cause of the initial decline. The main point is to make the neurasthenic mark derivative in the sense as outlined for the purpose of defining the first general method of physiological operation.

The second supposition is more blind. There is failure to see that many of the so called acquired neurasthenias are not acquired but have been developed upon a constitutional though latent basis. This matter of inferiority is acquiring greater attention as the specific measurement of physiological functioning gains in accuracy. A considerable proportion of the secretory, motility disturbances of the stomach fall in this category. The variation in the nitrogen disposal, the glycogenic disturbances, defect in fat metabolism, the malfunctioning of the ductless glands. the vasomotor anomalies are analogous manifestations in many instances. Even in so exogenous a field as bacterial infections there is expressly emphasized the presence of individual differences favoring the establishment and development of these colonies; of certain types of individuals being particularly prone even though the lines of such types may not be defined. All of these we group under subnormals or inferiors, perhaps because of being short on ætiology; but as the clinical work keeps freshened with laboratory material. there is coming to light more evidences of early forms, growth forms of these anomalies which seem to point toward an intrinsic beginning. It seems more logical, it is vastly more convenient to make here the second general operating tendency in neurasthenia as due to physiological inferiority than to attach the empty term of neurasthenia to any one of these petty divisions, where it neither qualifies nor explains.

In the psychological work two lines have been distinguished, one entering the analysis of function, as in the work of the French school, the other opening into the relation of a specific type of mental content to the disturbance, the operation proceeding under certain psychological laws. The first has been useful in defining and evaluating the symptoms, but not in explaining; this the second has done, for it alone possesses any trace of operating trends. It makes the neurasthenia dependent upon psychological factors.

Of these two lines the first is infertile and will here be dropped. The second raises a number of points and is troublesome because in it are both something of the old and more of the new. The old is to be sensed in the classic though somewhat imaginative picture of the neurasthenic sprung exclusively from worry and overwork, the product of mental fatigue in that relatively isolated sense of an intellectual overstrain; it is not a question of an emotional overload nor the result of acute mental shock; it has grown more out of conflict with extraneous factors than with those personal and intimate.

Yet this remains more of a restatement than explanation until activated by the new of Freud's neurasthenia studies. The group here has been limited to the insufficient reactions and consequent overfrequent recurrence of masturbation with the attendant conflict of personal ideals, all issuing in the train of neurasthenic marks. There are two distinct factors in this group. The first has to do with the insufficient reaction and produces a fatigue by way of an intensive representative activity during the act compensatory to this insufficiency of reaction with a further fatigue due to later attempts at exclusion. It largely fits the question of neurasthenia in its fatigue elements, made up of psychological factors, and should be grouped with the old, although the result of activation by the new. The second factor is concerned in the question of internal conflict of ideals, etc., resultant to the act. For the first time it has directed attention toward the mental content, the mind stuff; it explains by psychological laws the modifications resulting under strain and fusion; it shows a dynamic picture over against a purely formal analysis. Yet it does not belong to neurasthenia. The conflict here has to do with personal, endogenous factors operating differently; it has back of it a make up quite opposite to that of neurasthenia which conditions a conflict with extraneous circumstances outside the individual. It belongs to a different group and there will be described. With this particular reservation, out of the mixing of old and new the first psychological operating tendency presents with dynamic elements existing in the content and showing neurasthenic marks chiefly as reductions in mental functioning The second general psychological operation is to be considered as residing within the original make up. The architype here has been the constitutional neurasthenia. Its rigidity and age have served to keep from its embrace many forms deserving inclusion here and to scatter them about into other classes more fanciful than reasonable. In recent years there has come the tendency to overcome this rigidity by extension of limits; to make the constitutional neurasthenia not so much a psychological entity as a part of a fairly well conceived inferiority in which there are many gradations, all inferior but in different degree. The psychological indices are correspondingly varied. The levels of the process are dependent upon the function chiefly disturbed, upon the degree of inferiority and upon the nature of the exciting cause; hence the range extends from general reductions of different degree to localized reductions. Moreover, there seems to be a kind of hierarchy, as suggested by Janet, so far as this process of reduction is concerned; certain functions as that of attention are almost invariably affected even in minimal cases, while the sensory phenomena integrating into hypochondriacal groupings represent a very considerable reduction in any case. The degree of inferiority may be estimated partly by its frankness or latency, partly by the degree of dependence upon or independence of reasonable exciting causes, partly by the general evolution in time and extent of the symptom complex. The nature of the exciting cause raises the same point as in the first group, i. e., the difference in operation and results in external and internal conflict. The same ruling holds here as there; in the former a pure fatigue, in the latter a change not so much due to fatigue as to the mental alterations arising out of the conflict, its compromises and exclusions.

In evolving clinical types from these physiological and psychological inquiries as to operating tendencies, it looks to be a plain question of addition in summing up the different physiological and psychological groups. It is more than this, however. Clinical lines are best served in massing particulars; hence generalizations as to operating tendencies are useful chiefly in directing the lines of this grouping. The first clinical class, comprehending the physiologically inferior neurasthenic, exemplifies this; it forms anything but a clear group, yet it contains within its limits several divisions which easily can be isolated. The general grouping is of advantage solely as emphasizing and possibly correcting the relation of the neurasthenia marks to the physiological disturbance. While these marks stand apparently in direct causal relationship to the physiological changes, yet there is kept to the front by way of a general grouping the essential fact of both the neurasthenia marks and physiological changes being expressions of an underlying constitutional inferiority. Nor is this a uselessly refined distinction; it is of some importance as to whether a given disturbance in physiology is due to chance or stands as the result of an underlying inferiority.

Clinically the significance is considerable. All the groups within this general class show a fairly well marked evolution, a tendency either to fix or to recur frequently, a resistiveness to treatment, a liability to exaggeration through disproportionately slight causes. Their analogues can be traced within the family lines although the field attacked may be quite dissimilar. They may show themselves early in the personal history or their appearance, may be late. Back of the immediate symptoms may often be found evidences of transitional changes not sufficiently developed to attract attention. Generally, however, their history is ample, filled with vague examples of a persistent but indefinite defect. As individuals they have been viewed as less fit. Instances are not infrequent, however, where the unconscious accommodation of the individual life to the defect quite conceals its presence until an overload occurs.

It is not, of course, contended that all physiological inferiors develop the neurasthenia marks to be included here; for this there is necessary a fairly distinctive psychologically inferior make up; hence, as neurasthenias, there can be no isolated physiological or psychological inferiority; both must appear. Yet it is a matter of observation that in one group, the physiological, in another, the psychological inferiority gives the dominant tone. Hence again here is to be seen how factitious is the present division. Yet it is made only for the purpose of isolating clinical types.

Of these the gastric group is the most considerable or is made more prominent through readiness of access. The chief disturbance is the hyperchlorhydria, the hypochlorhydria and achylia being less frequent. It is not so much the regularity of their appearance which makes them distinctive as their wide variations. They may mend with a synchronous disappearance of all neurasthenic marks or they may persist after such disappearance. With a carbohydrate meal they may be absent, with a proteid marked, and the next day exactly the reverse may present. The quantitative changes in the total amount of secretion are often striking. The degree of variation in general is extreme; they do not pursue any average lines; they appear as reactions impossible to predicate with any exactness. They resist treatment, recur or disappear without apparent reason. While their manner of first appearance may have been abrupt, the history usually shows transitional states or analogues. To the motility disturbances similar applications can be made.

The relation to the general state is regularly plain and improvement is best served along this line. The neurasthenic marks picture in their general caste the gastric condition; they seem to represent more than the irritability, the worry about the physical state, the mental hyperæsthesia, the complainings, the vague pains; they are more diffuse, constant, insistent; they go beyond the attention disturbances to the elaboration of sensory perversions with, at times, a well marked hypochondriacal tone. It is difficult to get a grasp upon this class; they are resistive, incredulous; they are rarely deeply depressed, yet there is no such fluctuation of mood as obtains in the hysteric. While it is difficult to correlate their activity definitely with physiological functioning, yet the physiological gives in this type the dominant tone.

The intestinal group may figure as directly related to the stomach or present a rather isolated intoxicative picture. The former functions more in relation to a malnutrition but the latter presents distinctive clinical pictures. These may be roughly divided into two groups; one in which a bacterial infection with absorption of toxines is predominant, either due essentially to inferiority in resistiveness or to a secondary inferiority in faulty handling of various types of food thus presenting favorable conditions for colonization; the other depending primarily upon insufficiency of liver, pancreas or intestinal function, resulting in failure of proper elaboration with consequent inanition and a toxæmia through absorption of products of incomplete metabolism. The evidences in this field of inferiority are more ample than in the gastric; the history as a rule is long and continuous; the various somatic correlates are evident in the physical make up.

Likewise the neurasthenic marks are of a different type; they present as cardinal points a mental depression and profound neuromuscular fatigue. A periphery of other symptoms may present but the essentials are easy to distinguish. The mental reduction here seems to be deeper, lacking the diffuse and more shallow extensions of the preceding group. Their relations to the physiological state are quite definite, demonstrable in origin and evolution.

It will be remarked that, within this intestinal group, there have been comprised the numerous metabolic disturbances originating in faulty hepatic and pancreatic function. This has been done because the end results here are usually intoxicative in their coloring and by long association toxæmias have been allied by the medical mind to intestinal disturbances. The arrangement is convenient but neither correct nor logical. Yet it may be urged in excuse that the metabolic disturbances seen in this group are so insufficiently known, their symptomatology so vague that it is not possible to group them except by certain apparent end results, for, just how the liver fails to bind and oxidize products we do not know, but the effect of such free products upon the nervous system can be discerned and grouped. Always, however, we can see inferiority.

We are in a similar predicament as regards a second group having to do with the ductless glands, especially the thyreoid, parathyreoid, and the adrenals. It is here important to distinguish between those with definite physiological inferiority and that type which represents only exaggerations of normal activity during certain life epochs. The former class, which at this point concerns us, shows the criteria of similar or analogous hereditary deviations, a long history of latent or frank malfunction, among which should be mentioned a number of vasomotor anomalies, collated recently in a most excellent paper by Dr. Solis Cohen under Vasomotor Ataxia; in all cases there seems to be lacking a proper reaction to physiological stimuli, producing a picture of instability with a correlated inferiority plain to the eye. That they bear a relation to the motor functions of the stomach as in gastric tetany, to the nitrogen metabolism in the liver, to vasomotor states, to ovarian secretions helps slightly in forming certain indefinite types within this group. The neurasthenic marks present the general stamp of irritability, hyperæsthesia of all senses, with a constant and marked fatigue. As a rule the marks beyond these are neither particularly intense nor extensive even in profound exhaustive states. Their subordinate relation to the physiological inferiority is at all times clear.

A group involving inferiority in the circulatory mechanism is small. Most of such cases are dependent upon the result of some of the foregoing disturbances. There do appear, however, a few cases in which the circulatory apparatus is insufficient with neurasthenic marks at times showing an anxiety reaction with moderate depression and occasional algias especially common in the head and neck. The general indices of inferiority are plain.

The second main clinical group, the psychologically inferior neurasthenic, has lines less clear and demonstrable, yet with a higher colored, characteristic aspect than the preceding group. It is harder to define, easier to distinguish. The criteria have become somewhat better fixed by studies of mental make up, to which, in other fields, Meyer, Hoche, and others have devoted much attention. This make up bases itself upon the individual developmental history, its trends, reactions, etc.; it reveals itself in a continuum from early years to the developed malady; the measure of its strength lies partly in the frankness or extent of this continuous development, partly in the range of function involved, partly in the depth of the process.

There can be no question that a tendency has grown of resting over much upon the original make up; it savors, as one writer has said, of a strong predestination and against it, partly by way of protest and contrast, Freud's theory, having to do with content rather than form, has been strengthened. Aside from this neglect of content, the chief point of strain seems to be the projection of original trends into the ultimate symptom complexes solely by analogy of formation, with an ignoring of other sufficient causations. There is always the danger of reading into these signs that which does not belong or exist except in the interpreter's mind. Moreover the terminal symptoms may be so different from the premised trend in the original make up that the effort at connection is visible and the result artificial; this especially where the mutation is great. Freud's analysis has shown the need for as well as the presence of other factors in the procession of causes issuing in an adequate explanation.

It is different where the widening of make up broadens into definite symptomatic marks; here there is both continuum and growth. It is even more different and much more simple where there is mere continuation with slight growth or organization. This is an essential mark of the psychologically inferior neurasthenic. There seems to be a self limiting process at work. The child is father to the man. Symptoms present early and late, yet colored the same, save as characteristics of the different life epochs alter the interpretation. This means defect. The intensity of this defect varies widely; the range is more even, i. e., certain functions are regularly involved but in different degree. The variations in this respect go to make up the different groups within the main body; yet their isolation is a difficult matter, if there is to be attempted a rigid grouping. Clinically, however, it is sufficient to gather them into types which can serve quite well for purposes of orientation.

There is a considerable class in which the defect shows more in insufficiency of attention than elsewhere; they acquire readily but cannot acquire long nor without undue fatigue; they are restless, flitting, discontinuous, with slight endurance. Their school history is a series of gaps; later life is made up of interruptions. Where circumstances have permitted, affairs have arranged themselves to fit the individual mould; where surroundings have been less plastic, erosions of the individual occur and from this his symptoms flow. Occupations usually are sought which favor, but there is to be seen not infrequently this type of neurasthenic blown rapidly to the full by trades demanding a high degree of attention even though it may be on a low muscular plane. The progress of this type depends solely upon the exigencies of life; if the demands are elastic, favorable; if inelastic and rigid, disaster follows.

A type that presents features at first inconsistent with the general concept of insufficiency is one that may be termed the rotative. There is no discontinuity here but a real continuity within a circle. There is a limitation within a mass of given content and here the rotation occurs. It is not a real hemming but a limitation within which an intense representative activity presents. The content is strictly personal, egocentric, and usually has to do with a range of somatic disturbances; it was called in the days gone by, when things answered to their names, cerebral hyperæsthesia. There is no intense emotional activity except as secondary to the representative activity. The material undergoes neither elaboration nor reconstruction; it is a repetitive performance. It is difficult to explain from the side of content, for there are no elements traceable within the complex which have values sufficient to bind to this extent; moreover the same tendency displays itself in varied complexes. Outside of these the individual lives but little; not that he is an alien to others, but his conation seem enveloped within this small space. The matter appears to depend upon a definite intellectual defect, traceable from early to late life. The degree of this type of reaction may be widely varied, but the essential marks are the same in all life epochs.

The hypochondriacal or sensory type is related to the foregoing by way of its mechanism. It is rotative, but more productive within a field made up of sensory stuff; moreover there is an elaboration of material here which differs much, however, from the hypochondriacal states in certain psychoses. The expressions of the patient in description of the state are usually comparative, i. e., a given symptom is not absolutely construed in terms of a material change, but is put in a form where a similitude is expressed, but not insisted upon as a reality. There is no delusional construction, but a tremendous exaggeration of and rotation about the sensory points. Accession and remission of this state occur with no known relationship to outside causes. This type, expressing a considerable depth of defect, has, besides its own characteristic marks, the stamp of defect seen in the less severe and more superficial types. They stand as neurasthenics par excellence.

Another type are inferiors with vague yet persistent neurasthenic marks. It is difficult to label the defective functions. Caro has described one of their variations most beautifully in his pathography of Amiel. He calls it the "malady of the ideal." They aspire but cannot perform; their aspirations are not clear, but obscure, symbols of an unfitted individual. They are supersensitive, hypercritical. Their expression and thought is diffuse, incomplete and insufficient. It is not difficult to confound them with the rudimentary psychasthenic except that the latter displays more organization. Both are built upon inferiority. Within this same class are those who approach in reaction to the querulants, although they should by no means there be grouped. Here the defect is more considerable and seems to have invaded the social elements in the make up; vague disproportions are sensed; fluctuating ideas of reference occur. There is no organization and no absorption within the complex of all the individual trends. Nor is there progression; the picture of youth is that of the adult. Also their reaction to environment is ready, a trait common to the extensive clinical group of degenerative psychoses. These few types might be multiplied, but an added number could only more heavily emphasize the essential factor of defect in make up, the limitation and the absence of real evolution even in the midst of accessions and remissions.

A third general clinical group stands beyond the physiological inferior and the psychological inferior neurasthenic, related to them, but not of them. These might be termed, after Hoche, entities of a second order, possessed of too scanty marks or too incomplete an organization to merit an entity, yet with an essential coloring that demands a qualifying term. Their symptoms are neurasthenic, but they are not neurasthenias. The range of causative agents in physiological disturbances is too wide to permit even a hurried enumeration. The chief points to be held are the secondary character of the neurasthenic marks and the absence of inferiority in make up. Of those neurasthenics arising from efficient psychological causes, as in mental overwork, worry, strain, it is the belief of the writer that, of the results here issuing, few are really neurasthenic; nearly all belong to another grouping to which reference will later be made. A distinction will then be drawn between fatigue and other end results of straight mental overwork and the conditions arising from worry, anxiety, etc. Here it is sufficient to report that cases of uncomplicated overwork are few and that end results sprung from this are due either to a lighting up of an inferiority or are to be considered as strictly secondary neurasthenic marks to a state of fatigue; of the two alternatives, the former is by far the most frequent. Freud's neurasthenia is placed within this third general division, but with certain reservations. Where the insufficient reaction resulting from masturbation generates an intensive representative state as a compensatory sop with its necessary fatigue, the relation is plain; where, however, the masturbation, as an insufficient and unpleasantly toned reaction, raises an internal mental conflict in its wake, neither is the picture neurasthenic nor is the process one which characterizes neurasthenia. These three main groupings are not fixed; one characteristic of the neurasthenic is the freedom from rigidity. The first two forms constantly interlock as would be inferred from their common basis. The three represent more of a general outline than a detailed construction.

Although definite criteria of the neurasthenic state have thus far been emphasized, yet this generality of treatment leaves an uncertainty, especially when intuitive comparisons with other states occur to the mind; it formulates itself into a question as to what differentials can be marked out in the double purpose of accurate distinction from as well as clearer definition of the neurasthenic state. Psychasthenia, like neurasthenia, has suffered from its name; this name has made for a literal translation; in many instances this simple process of translation would seem to have saved the wearisome need of determining what the name stood for. It has been attached to neurasthenia, to hysteria, to light manic depressive cases, to præcox, to psychopaths of diverse kinds, solely because the particular presenting state seemed to fit the descriptive coloring of the name. This nominalistic mixing is unfortunate as there is enough difference on straight substantive grounds. Janet, who contributed to the entity more than any other, has later summarized it as neurasthenia with marked reduction. Out of it he formed his now familiar clinical composition of insufficiencies, reducing into the crises and derivative phenomena of tics, agitations, phobias, manias, ruminations, these in turn merging into the obsessions. He made the constitutional taint explicit; the heredity shows degenerative marks. The evolution of the malady is definite, although variable in extent and its cessation is more of an involution. The characteristic mark in all manifestations is a quantitative defect of function, an incompleteness, with few qualitative changes. In the clinical placing of psychasthenia there exists much divergence of opinion. It has been urged that many of the cases cited by Janet as psychasthenia should be placed with the præcox. There is no question that the delapidation of certain of the obsessional cases might raise this point. Moreover, in many of the derivative marks as phobias, tics, ruminations, the work of Freud, where here applied, has revealed an entirely different operating tendency, dynamic rather than formal in the sense of Janet. All this should be viewed as corrective rather than totally eliminating. There is a psychasthenia; its relation to neurasthenia is close; it is more of a psychoneurosis than neurosis with a train of mental symptoms displaying a definite development and interrelationship not possessed by neurasthenia; it is not frequent; it regularly has a marked constitutional basis; its presence should not be assumed solely by appearance of an isolated mark, but, for its existence, the general picture should be presented whether in rudimentary or extended form. In particular, it should not be forgotten that psychasthenic marks occur in other psychoses; that all tics, phobias, derivative marks or obsessions are not a part of genuine psychasthenia, but may show by analysis an organization and relationship quite diverse. The test lies in the estimate of the malady as a whole, not in the evaluation of an isolated mark.

Præcox is a psychosis in which, at early stages, certain superficial resemblances to neurasthenia are so striking as to conceal the nasic difference. There is really no common ground between the two, except that both have a constitutional basis, but, in each, of different formation. In præcox this type of make up, especially studied by Meyer and Hoch, has been well epitomized as "shut in." With adequate correction, personal and social, thus denied by this kind of blocking, there issue the wrong habits of mind and reaction which works as reentrant forces in pushing the growth of the early psychosis; the perversions of thought effect and will are rigidly necessary consequences.

This kind of mind affords the richest soil for endogenous growths within the personality. These growths or complexes which so flourish within the præcox are diverse; their relationship to the varied symptomatology is becoming more known through the methods of Freud in the hands of Bleuler and Jung. It is self evident that, in changes of this character, the initial marks must constitute relatively slight departures from the normal; because of this, not because of any essential similarity, these early symptoms are often mistaken for evidences of neurasthenia.

Two general trains of distinction can be marked out. There is a real difference in the symptoms themselves. The depressions of these early stages of præcox show a lack of clearness and order; the ideas are contradictory with slight richness in detail; the sensory phenomena are vague, the hypochondriacal notions childish, changeable, not insisted upon. The indifference is more flaccid, the lack of interest, indecision, loss of conation and other will anomalies are more real. Any or all of these marks are liable to be broken, interrupted with a widely diverse change. There is a striking inaccessibility. Also progression can be seen at all points.

Aside from these symptomatic marks, there also presents the difference in make up. It is more difficult to define and is dependent upon a thorough early history. With this it can usually be made out along the lines referred to above. It is in the make up that the contrast with neurasthenia is most striking when arrived at, for the distinction in symptomatic marks are comparative refinements. The difference in make up is fundamental. The neurasthenic is not a "shut in," although the level along which he must maintain himself for comparative fitness' sake may outwardly appear a restraint. In reality there is nothing passive as in the præcox; his activity is centrifugal, not centripetal. There is a constant striving to get above this level and from this proceed his derivative marks, expressions of his inability. Yet it is this same self limitation holding him to his level which, as well, serves to check the progression into a psychosis and marks him off from the progressive deterioration of the præcox.

The differentiation of neurasthenia does not rest entirely upon distinctions in isolated marks or complexes of such; it is not alone a comparison of the parts, but a comparison of the whole which is demanded in certain of the neurasthenic phases. Nowhere is this better to be seen than in the matter of the neurasthenic depressive states. The comparison here must not stop with the depressions; it must also include the manner of appearance, place in anamnesis, the relation to the whole.

The particular psychosis which forces this comparison is the manic depressive in its early stages or light forms. For the purposes of simplification and that there may not here be injected the present uncertainty as to the inclusion within this group of all involutional psychoses, melancholias and simple psychogenous depressions, this manic depressive group will be assumed as comprehending a large part of the light depressive states, variously represented as belonging either to manic depressive or to one of the above groups. The fundamental operation of this psychosis is an exaggeration of the normal biological tendency of alternation, seen in the heredity, make up and development of the individual, early expressed in attitudes and reactions constantly slightly above or below the normal level, usually with a firmer integration of these tendencies into definite depressive or manic phases as time goes on. Yet it is most difficult in certain types to be assured of the existence of real alternation as the depressions may present in a series unbroken for a long period by any manic phase or interrupted by one of so low intensity as to escape specific recognition as such; or, again, the free interval between such periods may be so considerable as to obscure the continuity of the process. When it is recalled that the depressions in neurasthenia are often discontinuous or present sufficient local exaggeration as to lead toward error in estimating them as isolated and recurring phenomena, it is apparent that distinctions based on this side are not easy.

Swinging, however, from this general or biological aspect to that which has to do with an examination of the depressions themselves, more definite criteria can be fixed. The characteristic mark of the depressive phase of the manic depressive is the "hemming," something more than a simple restriction or limitation. This affects the representations, the emotions, the motor reactions. It is always subjective at least, usually objective where looked for. In light phases it is slight, but present. Its most frequent interpretative mark is a perplexity, a sense of relative despair, a bewilderment; the patient cannot think a question out; he is stopped. It is this inability to arrive that actually hurts, although the emotional stress may seem to rest upon some other particular situation. The state is quite different from a confusion, and where such presents, it is secondary to the hemming. The emotional tone is frankly depressive and of considerable intensity even in light cases; the motor reactions, while showing, as a rule, the hemming, may present the excessive activity if an anxious reaction dominates the depressive phase.

Beyond these clinical marks which share the qualities of all such to individual misinterpretation, there have been turned up, in the work resulting from the psychanalysis propaganda, applications going to show an operative tendency in the manic depressive quite as different from neurasthenia as is the biological distinction and considerably easier of determination. Briefly, it has to do with the results of internal conflict, one concerned with intrapersonal factors. The peculiar character of the result is the sum of the operation and the make up of the individual. With a given tendency toward alternation, with a gradual exaggeration of this variation beyond the normal, the effect of this type of conflict has been shown to be efficient in bringing about the characteristic marks of the different phases. In all reducible cases it is probable that such an operating complex within the individual can be arrived at and will show in its content changes due to exclusions, compromises, intensive inhibitory effects, all converging to produce the characteristic surface disturbances.

On all these three counts the contrast to neurasthenia stands out; there the phenomena of alternation are lacking with a wide difference in general make up, points which a careful anamnesis will sustain; the clinical marks under close analysis do not touch; the operating tendency is absolutely different in neurasthenia, for the results issue from a psychological inferiority and the struggle of such an endowment against factors of life, never displaying the complex formation of the internal conflict.

An allusion has been made to a type of neurasthenia showing an indefinite paranoiac coloring, in general tone querulant. This particular group is difficult to isolate clinically and rather questionable as representatives of a fixed place, for they merge in many instances with certain of the psychopaths, individuals described by Ziehen as showing functional psychic states with light and scattered symptoms in affects and intellect, stopping short of extensions into hallucinations and delusions. When constitutional basis is brought into the question, the relation of the psychologically inferior neurasthenic to the psychopath is plain. This Ziehen definitely implies in his lectures upon the psychopaths, among whom he develops the neurasthenic psychopathic constitution. Looked at from the schema of the present classification, his paranoiac psychopathic constitution is either a more advanced type or a closely related type to the neurasthenia with paranoiac trends. The general clinical lines support this; youth shows more marked vagaries; they have not only been sensitive with heightened self tone, but it would seem they have sought out personalities infringing upon them as might trouble seekers; they develop early "intuitive interpretations of relationship"; the querulant tone is rather constant. In general the entire life presents this coloring; it deepens temporarily at certain times and under certain conditions, but it fails to progress. Age is like youth. The vague delusional content never integrates; rather it is elastic, markedly influenced by environment. Unlike the paranoid præcox, there present no dementing marks; nor is there a transition into true paranoia. Where the hypochondriacal features are dominant, the reaction is anxious, insistent, absorbing the entire attention with intense representative states showing considerable affect disturbance. It matters little what these states are called, so long as they are recognized as standing just over the line from certain of the psychological inferior neurasthenics; also, that, although their coloring is paranoia, they touch in no way the make up or course of true paranoia.

It is apparent that the draughting of these few differentials has been done with a purpose more of defining neurasthenia in a negative way and less in presenting a closely detailed account of the clinical divergencies in the psychoses presented. There is a tendency to infer that all neurasthenias really belong somewhere else; that, as a division, they should be wiped out. With this has come a dangerously superficial acquaintance among the psychoses which has served to infect the mind with the resemblances between these in their early forms and the neurasthenic; the essential differences have been pushed to the background by the high lights upon the preceding features.

That a recasting of neurasthenia is necessary, this paper serves to admit; but that everything be thrown out before beginning this process, it strongly opposes. Especially is it directed against the exclusive tendency toward psychological interpretation with scant consideration and curt disposition of the physiological factors. Less than in any other neurosis or neuropsychosis should this hold here with neurasthenia. It occupies a unique position in affording within itself opportunities and demands for both lines of inquiry with unusual possibilities for substantial results. This bipartite aspect it has been the purpose in this paper to emphasize, even though the dividing lines have been overheavily drawn. In this consideration, while much has been thrown out, there remains a distinct and large group of cases to which the term neurasthenia is applicable and belonging to which are a fairly definite mass of qualifications constituting a clinical entity sufficiently strong to stand by itself and clear enough to avoid a transfer toward the discard heap.

55 East Fifty-sixth Street.

BACTERIOLOGICAL STUDIES IN CASES OF GENERAL PARESIS.

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(*Preliminary Report.*)

(*From the Clinical Laboratory of the Philadelphia Hospital.*)

Justification of bacteriological studies of general paresis may not be amiss, especially in view of the almost universal acceptance of lues as a cause of this disease. While lues was generally accepted previous to Krafft-Ebing's efforts to inoculate patients suffering from general paresis with specific virus without success, his work was at once heralded as another link in the chain of evidence of the luetic origin of this disease. The final link in the chain appeared to be forged in the work of Wassermann and his many followers, in showing a large percentage of this type of cases to respond positively to the Wassermann test. Literature abounds with references to the stress of life upon the civilized races as an added factor, so that civilization and syphilization appear to be the accepted factors of paresization of the present century, and though the evidence appears to be impregnable, one of us, Dr. Stern, felt, after a careful clinical study of general paresis, there could be detected a profound toxic state at times in certain cases, and the general appearances differed from those usually presented by any syphilitic stage or process usually observed. Further, one would meet the rapid fulminating type in which, after careful questioning of the relatives, one would find the onset abrupt, in which we could surely exclude the probability that family and other indulgences had been blind to, or disturbances of health for a long period of time previous to the collapse of the patient. Syphilis could be as surely excluded, while clinical studies and observations of this type of the disease would show physical signs of paresis, yet the symptom complex would show differences. This led to further observation as to the differential diagnosis of general paresis and most teachers and textbooks in psychiatry referred to pseudoalcoholic paresis and cerebrospinal syphilis, as the conditions most likely to cause difficulty in the diagnosis of the disease. One was readily impressed with the fact that though they all described methods of differential diagnosis in alcoholic pseudoparesis, little could be found to distinguish it from cerebrospinal syphilis. Pursuing our observations and studies, we found that certain cases would resemble in many ways an infection, and differ in many ways from cases with similar diagnosis under my care.

About this time, Dr. Stern became interested in the studies of pellagra and in pursuing same, his attention was called to the observations of such men as Marie, Lombroso, Turczek, and many other authorities, who, in the differential diagnosis of this disease, included general paresis as a condition which might cause the greatest difficulty in diagnosis. The statement is made by these observers that even at autopsy this separation is often difficult and impossible. Our studies and clinical observations showed that many cases of general paresis were indeed very closely allied if not in themselves pellagra.

Bacteriological observations were made in general paresis as early as 1879, when Voisin, in a study of the blood of general paresis, reports the presence of vibrions and bacteria. Then little of interest was noted until Ford Robertson's work in paresis was reported to the profession. Robertson stated to have isolated a diphtheroid organism from the blood, spinal fluid, urine, fæces, and urethra, which he said was specific for general paresis. Later, observations by himself and others showed that the organism could be isolated from other forms of insanity than general paresis. Then followed reports both negative and confirmatory by many workers. However, little importance was attached to this work except by a few followers of Robertson in England, while recently in this country O'Brien asserted, with some slight modification of technique, that he had again isolated an organism that answered the description of Ford Robertson's organism, that he had completed Koch's law and had obtained a serum for the cure of the disease.

After a résumé of these facts, we decided that bacteriological studies might prove of interest in a series of cases. Lumbar punctures were performed and the cerebrospinal fluid inoculated into culture media; and from the first, we obtained a bacillus in no way allied to Robertson's bacillus. This led us to further prosecute our studies, and early in our observations many problems confronted us in technique and in selection of cases. Some of them were readily mastered; a few of them yet remain to be overcome.

The bacteriological studies upon which this preliminary report is based were carried out in twenty-nine cases, which included general paresis of the insane, and other forms of insanity as controls, in which we secured a growth of our organism in nine. The description of the organism we have isolated is as follows:—A short bacillus, from two to three micra in length, from 0.3 to 0.5 micra in thickness, arranged singly and in pairs, (end to end) and in groups; sporiferous; Gram positive; actively motile. Bouillon; turbid; no pellicle. Gelatin stab; growth follows the puncture, whitish in color; and no liquefaction of medium. No gas production. Agar slant; growth moist, grayish white, filmlike, abundant in from forty-eight to seventy-two hours. Potato; no visible growth up to ten days. Litmus milk; turned acid in three days, followed by coagulation in from five to seven days. Blood serum; filmlike and whitish in color; no liquefaction.

Microscopical agglutination tests, using one to twenty and one to forty dilution, were positive in general paresis and negative in a few controls, using blood for the latter tests from apparently normal individuals and from cases of dementia præcox.

As to identification of this organism, comparative studies fail to show any organism that has the same cultural peculiarities as the organism isolated by us. The question of possible contamination was early taken up, and was readily ruled out by our sterile control inoculations taken from the skin immediately before puncturing the spinal canal. The technique, which was most carefully carried out, was as follows: The patient was scrubbed in the usual manner prior to surgical operation, and then over the area to be punctured, pure lysol or tincture of iodine was applied in liberal quantities. The needle, previously boiled, was immersed in a two per cent. lysol solution awaiting its use, and before making puncture the tip was dipped in pure lysol or tincture of iodine solution. After the puncture, we collected the first few cubic centimetres of fluid in a sterile test tube for other observations; our object in this being that if perchance after the care to prevent skin infection, any organism finding its way into the point of the needle during puncture, the flow of fluid would act as a mechanical cleanser and flood same out with the flow of the last few cubic centimetres of fluid. We then collected, in a sterile tube covered with an alcohol dipped sponge, fluid for our bacteriological observation.

The spinal fluid was clear (with few exceptions when slightly blood tinged), alkaline in reaction, specific gravity from 1.008 to 1.014. Centrifugalization of from twenty to thirty minutes always deposited uniform small pin point to pinhead sized sediment of blood. Examination revealed red and white blood cells and degenerative endothelial cells.

In conclusion we would urge that further bacteriological studies in the general paresis group be carried on after careful clinical studies of the cases are made, with a view of exclusion of cerebrospinal syphilis and its necessary misleading results. It is our opinion that general paresis as seen to-day is a symptom complex and not a disease entity as heretofore accepted; but a symptom group possible in at least three forms we are familiar with to-day. We refer to cerebrospinal syphilis, alcoholic pseudoparesis, and pellagra. We recognize the futility of endeavoring to secure an organism in the first and second, though the possibility of an organism in the third or the probability and possibility of even a fourth class or group of cases presenting the symptom complex of general paresis that may be due to bacterial invasion.

ATYPICAL GENERAL PARALYSIS OF THE INSANE.

*With Report of Case.**

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Atypical forms of general paralysis have been described by many authors as far back as 1857. Cases of general paralysis were reported in which the patient showed symptoms either in the sensorium or motorium, which suggested focal lesions in the central nervous system, yet which at autopsy showed no evidence of such focal lesions. It was found, however, that in the places where a focal lesion was suspected the general encephalitic process of paresis was more severe and destructive. For instance, in hemiplegic paretics it was found that the hemisphere corresponding to the hemiplegia weighed considerably less than the other hemisphere. Cases of paresis with an accompanying aphasia have also been reported. Serieux and Mignot described a case of sensory aphasia, and at autopsy it was found that the encephalitic process was especially marked in the temporal lobe. Ballet showed a case of motor aphasia in which a severe destruction of Broca's area was found in a paretic brain.

From the history of the patient here presented it appears that he suffered on numerous occasions from paraphasia prior to coming to the institution, although this has not as yet been demonstrated during his stay here.

Recently Bader described a case of paresis with a cerebral atrophy confined solely to one hemisphere. This case showed a corresponding hemiplegia and accompanying sensory disturbance on that side. For an especially thorough study of the focal manifestations in paretics, we are indebted to Wernicke and his followers. Wernicke insisted that a paretic is liable to show, during the course of his disease, any or all of the possible symptoms or groups of symptoms which may be caused by lesions in the cerebrum. In a late work Lissauer described several cases of atypical paresis in which he came to the conclusion that in certain cases, instead of having the usual foremost involvement of the frontal regions, the posterior half of the cerebrum was involved, while the frontal lobes were relatively free from the encephalitis. He says that these forms, instead of exhibiting clinically the usual gradually progressive course, progress in isolated strides, accompanied by various phenomena of a focal nature. These cases also differ from the ordinary cases of paresis in that the dementia is not the predominant picture of the disease. At post mortem examination the section shows a severe atrophy limited to those places which would correspond to the clinical focal manifestations of the disease. Microscopical examinations of these places show the disappearance of certain strata of the architecture of the cerebrum, especially the second and third layers of the cortex; and as Lissauer supposes, a dependent secondary degeneration of the nerve fibres. And so Lissauer comes to the conclusion that, primarily, paresis depends upon an involvement of single ganglion cell layers, which is then followed by destruction and disappearance of the medullary sheets and a glia proliferation. These conclusions were possible because in the cases of Lissauer the disease had not involved the entire cerebral cortex, being confined to certain circumscribed localities, the destructive process of these localities could go on to a more marked degree before the disease terminated in the patient's death.

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*Read before the Georgetown Clinical Society, Washington, D. C.

Altzheimer, in one of his latest works, reports a series of eight cases of atypical paresis. The first of his series is somewhat similar to our case, in that two and one quarter years prior to any manifestations of dementia the patient had convulsions, and the year before his admission to an institution a hemiplegia developed. In another case of his series he found a very interesting condition, namely, the coexistence of two separate pathological processes at the same time,—a glioma and a paretic brain. The locality of the glioma corresponded to the point of the severest paralytic manifestation in the clinical picture of the patient. Altzheimer comes to the conclusion that the effects of these paralytic attacks gradually disappear and leave little if any evidence of the progress of the disease, until after a lapse of years another paralytic attack brings back to the front the fact that these manifestations are simply episodes in the course of the disease.

Another noteworthy fact has been demonstrated by means of the histopathological study of these cases; namely, if the first attack in the course of the disease was manifested either by sensory-motor aphasia, hemianopsia or hemiplegia, the subsequent attacks, in most instances, will be manifestations of a similar nature, only of a severer degree. In the case of our hemiplegic the ocular palsy occurred about eight years after the hemiplegia, and in the same side. It appears, therefore, that when the disease has once established itself in a certain locality, there is a greater tendency for the process to become gradually more destructive in that locality rather than to spread superficially or affect other isolated areas. Whereas in ordinary paresis the atrophy is distributed equally in both hemispheres, in the atypical forms it is very rarely that this holds true. There is usually a place unilaterally where the atrophy and destruction of the cortex is much more severe than in other places. Why this is so we have not as yet been able to establish.

We therefore perceive from these statements that the paretic process is able to produce severe circumscribed lesions of the posterior half of the cerebrum to such an extent that the predominant picture of the disease is that of manifestations of focal disturbances, before distinct signs of a general psychic disturbance can be manifested. Such cases tend to have prolonged remissions of the disease, interrupted by sudden manifestations of a focal nature. An easy transition from the ordinary to the atypical forms of the disease—because the pathological process is essentially the same—is readily possible.

I present this case to-night because any additional knowledge that we may gain to help us in diagnosticating cases of general paralysis which show focal symptoms, is of the greatest importance. Especially is this true as regards giving a prognosis. The patient had hemiplegia eleven years ago, and paralysis of some of the ocular muscles resulting in a right internal strabismus about three years ago. Although the patient's family were aware two years ago that he was changing mentally, nothing beyond the physical disturbance entered into the consideration of the attending physician until only very recently, according to the wife's statements. In fact, the family hoped the patient would be perfectly well as soon as he recovered fully from the paralysis, until they were told the nature of the malady from which he was suffering.

The importance of emphasizing upon the general practitioner the possibility of the disease manifesting itself in local paresis or hemiplegia solely, without the least signs of dementia until the disease has reached an advanced stage, cannot be over estimated. Of course, the use of the Wassermann reaction and the cytoanalysis of the cerebrospinal fluid should, under no circumstances, be neglected in these cases, because in the whole field of psychiatry there is nothing equal in importance to the earliest possible diagnosis of paresis.

I will now give a brief abstract of the case:

CASE. T. D.; white; aged fifty-five years; was admitted on March 21, 1910:

Nothing could be determined of the history of the grandparents and parents beyond the fact that they lived to a very old age. Patient was born in Dublin, was a normal child in every respect, had a fair education, and came to this country at the age of fifteen. He became a bookmaker at the horse races; was always a moderate but steady drinker. No history of venereal infection. Patient married about fourteen years ago, at the age of forty-one. He had two children from this union, a boy of twelve and another of eleven years of age. His wife had two spontaneous miscarriages.

About eleven years ago, while at Hamilton, Canada, the patient had a paralytic stroke. A right hemiplegia developed as a result, but after three weeks' confinement in a hospital he was able to use his leg sufficiently to move about in a characteristic hemiplegic way. His wife stated that he would wear out the carpet from the dragging of the right leg. A noteworthy thing in connection with this case was that the patient, after having recovered almost the entire use of his hand, still could not write. He seemed to have forgotten how to write, as his wife put it. He was obliged to relearn to write. At that time no mental disturbance of any kind could be noted. The patient attended to his business affairs as usual, but whereas he was very successful prior to this, he gradually lost hold of his business since that time. About three years ago a sudden right internal strabismus developed from which he was suffering now. His wife stated she could not definitely tell when the patient began to change mentally. She had thought him queer for some time, but about two years ago she definitely noticed changes in his behavior and entire makeup. To put it in her own words, her husband had exaggerated notions about things, and peculiar ideas in general. His memory was very good for things of the past, but he would not remember in the afternoon what he had had for breakfast. He was always ready to sleep; she stated he would be walking about the room, then sit down in a chair and in two minutes would be sound asleep. He became slowly but progressively worse, until of late he was confused, would not recognize his most intimate friends, and would wander off on the street at night in an almost nude condition if he had a chance. She stated that for about one year past he had some trouble in talking. "One time I remember distinctly, he wanted a brush for his shoes and he asked me for a shovel, etc. I would have to guess the word he wanted to say, and then he would say, Yes." On one occasion he accused his wife of infidelity, and was watching all through the night with a pistol in his hand for the man he suspected. He finally became so untidy and unmanageable that he was placed in this institution. He never exhibited any convulsions.

On admission to this hospital the patient was clouded to a marked degree. He was disoriented in all spheres, exhibited marked grandiose delusions of a fleeting character, was very irritable, and exhibited marked impulsive tendencies. He was untidy in habits, and had to be looked after like a child and spoon fed. Memory was very much impaired, especially for recent events, and he was demented to a marked degree. He said he owned all the race horses in the world, was the strongest man in the world, and never felt better in his life.

Physical examination: White, male, well nourished. Skin white and fine in texture, and moist to the touch. Respiratory, circulatory, digestive, and genitourinary systems were apparently all right.

Neurological examination: No atrophies or hypertrophies present. Voluntary movements slow and unsteady. There was trombone movement of the tongue on protrusion. Tongue protruded in the median line. His gait was unsteady and hemiplegic to a certain extent.

Reflexes: All deep reflexes were exaggerated, more so on the left side; superficial reflexes very faint.

Grip, right 60, left 55. Station, fairly good; no definite Rhomberg; coordination fairly good. Speech drawling and scanning; failed to pronounce the usual test phrases.

Eyes: Internal strabismus of right eye; pupils were regular in outline, right larger than left; did not react either to light or accommodation.

Examination of the blood gave a double positive reaction with the Wassermann test. Examination of the cerebrospinal fluid showed the following: Fluid clear, pressure not increased. Noguchi test positive. Cells to every cubic millimetre, 117. Differential count: Lymphocytes, 75 per cent.; phagocytes, 12 per cent.; plasma cells, 5.5 per cent.; Körnchen cells, 1.5 per cent.; polymorphonuclear cells, 6 per cent.

PARATYPHOID FEVER.*

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The subject of this paper is one that has greatly interested the writer and should be of vast concern to the medical profession in general, because of its similarity to our most common continuous fever, typhoid.

Over 300 cases of this affection have been reported in literature, which have followed a course resembling that of typhoid fever, but in which the causal element was found not to be the *Bacillus typhosus*. Archard, in 1896, described the first two cases of paratyphoid fever, and isolated a bacterium differing in many ways from the typhoid bacillus. In rapid succession cases were reported, and the bacillus studied by Widal, Cushing, Jurgens, and others.

The *Bacillus paratyphosus* belongs to the genus typhocolon. It stands between the colon bacillus and the typhoid bacillus, probably in closer relationship to the latter. Of the members of this family, the *Bacillus coli communis* and the *Bacillus typhosus* are diametrically placed, with the members forming midgroups, the paratyphoid bacillus closely approximating the *Bacillus typhosus*, whereas the bacillus of Gaertner or the bacillus of meat poisoning, which also is closely related, is placed nearer the *Bacillus coli*. The *Bacillus paratyphosus* differs from the bacillus of typhoid fever in that the former is shorter, more slender, less flagellated, and more motile. It also is unlike in certain cultural properties. From the *Bacillus coli* it is distinguished by its failure to produce indol.

The *onset* of this disease is generally of brief duration and somewhat abrupt. The patient who was in former good health is soon complaining of various muscular and so called bone pains. Stiffness of the neck has been a very prominent symptom in this series of cases. Chills are not common, but the occurrence of chilly sensations and more or less profuse sweating are not infrequent. Sore throat, severe headache, pain in the "pit of the stomach" are ofttimes present. This short prodromal period of from three to five days duration, contrasts markedly with the long drawn, insidious onset of typhoid fever with its malaise, anorexia, and insomnia.

The general symptoms of the disease are of early advent. The patient may present an anxious and flushed appearance for the first few days and stupidity may exist in a mild form, but in the writer's cases these signs soon disappeared, and the patients become extremely bright and placid, troubled not in the least with insomnia. In severe cases, great dulness of intellect and delirium may occur. The headache of the prodromal period, which is rather a pain, cephalalgia, than an ache, soon lessens and disappears. The *alimentary symptoms* are to a certain extent characteristic. The tongue, which in typhoid fever is early swollen, thickly coated, and tremulous and later dry and fissured, in this disease remains moist throughout, is of normal size and only lightly coated. Sordes do not tend to collect. The appetite is usually blunted in the early stage but rapidly returns, even before the fever had desisted. Redness of the pharynx and painful swallowing which may have been pronounced in the prodromal state become less and pass away. Nausea and vomiting are of frequent occurrence in the early days of the disease. The intestinal condition is quite typical. Although diarrhœa does occur, it is not the rule, and constipation is much more frequent. In the writer's cases the evacuation of formed fæces throughout the course of the disease was characteristic. Tympanites of great degree is not common, although slight abdominal distention does occur, but as a rule is not troublesome. The spleen is usually enlarged, even if not palpable it may be revealed by percussion. The liver is found enlarged in great percentage of cases. Intestinal hæmorrhage is not frequently met with.

The *febrile manifestation* is extremely characteristic. High fever may occur in the early stage, and the fastigium is rapidly reached. The diurnal remission of temperature is a very pronounced and indicative sign. From the beginning of the disease the fever may remit daily, very often to normal. The fall of temperature is frequently as much as 4° or 5° F. The accompanying chart, which is quite typical of all the cases of this series distinctly shows this oscillation of temperature. The fever, which in many instances is of shorter duration than in typhoid fever, may continue for an extended period. In one of the writer's patients the febrile period lasted thirty-nine days. The decline may take place by crisis or lysis.

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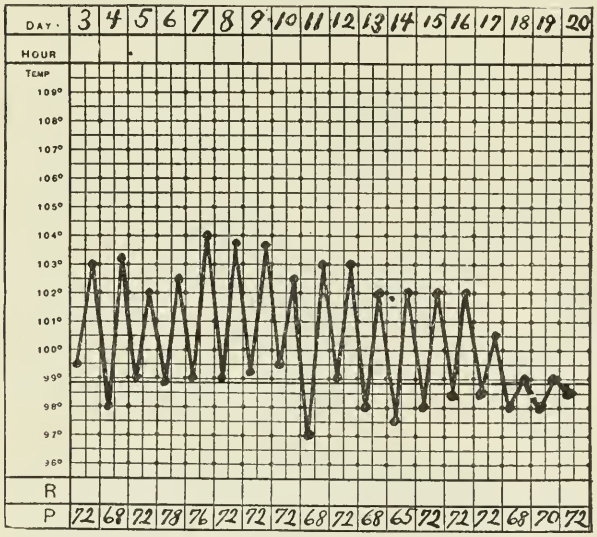

Showing oscillation of temperature in paratyphoid.

The skin may present a roseolar eruption which occasionally is typhoidlike or more often as a dark, blotchy lesion with tendency toward confluence. Sweating may be marked in the early stage. The pulse rate is slow, compared to the degree of fever present, and may take on a dicrotic quality.

Complications of a purulent nature seem to be not at all uncommon, arthritis, otitis, osteomyelitis, and parotiditis being the most frequent. Intestinal hæmorrhage if it occurs is not alarming. Perforation of the bowels I have not seen reported in literature.

But little can be said of the *prognosis* in paratyphoid fever for reason of the limited number of cases reported in literature. As a rule the course of the disease is shorter and milder than that of typhoid fever. In some instances the duration of the affection has been twelve weeks, or longer. Convalescence may be very tardy, and relapses are not uncommon. Complications are frequent. The mortality in reported cases has been about three per cent.

The *diagnosis* of paratyphoid fever is of most import to us. The clinical course of the disease bears a close resemblance to that of typhoid fever, and it may be absolutely impossible to distinguish the two diseases clinically. There are, however, certain points of dissimilarity. The abrupt onset, the short prodromal period, the marked diurnal remission of temperature, the blotchy eruption, the moist tongue, and the bowel condition of paratyphoid fever will greatly aid in diagnosis. The surety of diagnosis must, notwithstanding, rest on bacteriological methods. The repeated absence of the Grueber-Widal reaction is of utmost importance. Gwyn has said that this reaction is found in 99.6 per cent. of all patients suffering from typhoid fever; hence its constant nonappearance or its occurrence only in low dilution, (1 to 10 or 1 to 5) in a typhoidlike disease is very suggestive of paratyphoid fever. The finding of a paratyphoid agglutination is typical and may occur in dilution as high as 1 to 6,000. The most conclusive evidence, however, is the isolation of the bacillus from the patient's blood.

Very few instances of necropsic examinations are recorded, therefore our knowledge of the morbid anatomy of this affection is limited and very incomplete. Intestinal lesions have been described in the form of slight ulceration, but the Peyer's patch and lymphatic changes were wanting. Splenic enlargement was the rule.

Regarding treatment there is little to be said, except that it should be rational and conducted on the same lines as in typhoid fever, as, rest in bed, liquid diet, antipyretic measures, and the endeavor to prevent the occurrence of complications, the thorough disinfection of all excreta.

This paper is based on six cases of paratyphoid fever occurring in the writer's practice. Five of these occurred within a week, and apprehension as to an impending epidemic was excited, but no more have developed. The mode of transmission was never discovered, neither was the focus of origin located. Some of the patients used ice, others did not; the homes were widely separated; the milk supply was not common; the drinking water was found to be free from all contamination; and the failure of further development of the disease excluded the water as the source of disease.

It is the writer's opinion that many cases of this disease are diagnosticated and treated as typhoid fever, and, if the desire to more fully study and distinguish these affections by the local medical profession is stimulated by this paper, the purpose of the writer will have been accomplished.

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DIGITALIS FUCHSII (FOXGLOVE V. FOXESGLEW); "OPIUM OF THE HEART"; "QUINQUINA DU CŒUR."

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C.P. I., M. R. I.A.; etc.,
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Our definite knowledge of foxglove traces its genesis back to the renaissance of botany, but not—as in the case of so many of the more powerful of (European) vegetable remedies—to the mists of classic antiquity. The name digitalis was first—so far as we can now ascertain—applied to the plant in question in the sixteenth century. The inventor of the appellation was Leonard Fuchs, one of the pioneer fathers of modern scientific botany, whose name has been embalmed for all time in that of the botanical genus *Fuchsia.* It would at first sight appear, as indeed popular opinion seems to have everywhere made it, to have been suggested by the crude resemblance of the shape of the flower to that of the finger of a glove. To such an original inspiration of symbolic nomenclature must unquestionably have been due the time honored French ones of *gant de Notre-Dame* and *doigtier,* and the Dutch of *vingercruidt.*

The Greeks of the present day call digitalis δακτυλῖτις. Baillon has collected the additional synonyms of *gantelet, gantelée, gantillier, gandio, pavée. pisse-lait. petrole, petereaux.* Of the luminaries of the twilight dawn of botanical science, we find that Columna would identify digitalis with the *ephemerum* of Dioscorides; and Dalecampius thought that he had discovered its identity with the *calathiana viola* of the elder Pliny. But there is no conclusive proof of either hypothesis now procurable. It is of some interest, even if but for the negative purpose of correction, to note, as we pass, the mistake which appears to be made even still by the great majority of uninquiring readers—even many "well informed" medical ones—that the English name of "foxglove" owed its evolutionary genesis to the special resemblance of outline form which suggested that of digitalis itself. Fuchs adopted the latter term from the suggestive peculiarity of shape—corresponding, as it did, to the popular German appellation of *Fingerhut* (thimble). But the English name is really an altered form of the good old Anglo-Saxon word *foxesglew* (fox's music)—an allusion to its resemblance to an antique musical instrument, that consisted of a bell attached to the end of a support which was curved in form of a bow. (Still I regard it as part of my duty to note in passing that the monumental *New English Dictionary* does not seem to have even heard of this derivation.) Under the heading of Foxglove we are there told that: "the reason for the second part of the name is obvious, as the flower resembles a fingerstall in shape; *cf.* the Latin name. Why the plant was associated with the fox is not so clear; but *cf.* Norw, *revbjelde* = 'fox bell.'" (Was it an oversight?) And here another instance of singular coincidence of nomenclature presents itself, which did not fail to impress the great French botanist, Baillon, who—also—does not seem to have heard of the "foxesglew": "Chose singulière, le nom allemand de ce médecin [Leonardus Fuchsius] signifie *renard* (Fuchs) et, en Angleterre, la digitale porte le nom de *foxglove* ou *gant de renard.* Je me demande s'il y a là un double rencontre ou si ce nom anglais ne signifie pas plutôt *digitalis Fuchsii,* en souvenir de l'intronisateur de ce précieux médicament. J'abandonne cette discussion aux erudits, . . ." We are told by the encyclopædic author of the *Paradisus in Sole* that: "*Cæsalpinus* calleth it *Virga regia major flore purpureo, Alisma* also and *Damsonium,* and *Fistula pastoris.* Tragus calleth it *Campanula sylvestris, flore purpureo,* and *flore luteo;* and the *Italians* call it *Aralda* as *Camerarius* saith. . ."

The familiar foxglove is one of the very few of our important vegetable therapeutic agents of European growth of which no definite botanic history or *quasi* scientific lore has been transmitted to us from the classic fountains of the venerable antiquity of the semiinspired pagan past. But its modern position is, nevertheless, one of the most firmly founded—on the unshakeable rock of scientific faith and practice. And it is one of those special weapons, too, of the modern therapeutic armamentarium, whose properties and powers have been continuously subjected to the scrutinizing cross-examination (of the most penetrating intellectual inquisitors and illuminating searchlights) of the past century and a quarter, at least. During that period the lustre of its reputation has never been sensibly tarnished, nor has its radiance grown pale in the presence of its most dazzling rivals. All its alleged failings have been inquired into, and its attributed merits unsympathetically tested, by, and in presence of, the highest placed judges of the cosmopolitan tribunal of science; it has been subjected to the severest scrutiny throughout the whole length of the nineteenth century—the most "scientific," the most "practical," the most materialistic, and the most skeptical (although occasionally, too, it must be admitted, the most *charlatanic*) of all the recorded epochs of the chequered history of the human race. Yet it has, every time, left the court without a stain on its character. Whenever mischief had been found associated with its use, the fault had not lain with the weapon, but with the (mis-) guiding hand!

The professional recognition of the therapeutic value of digitalis by the skilled and experienced medical expert is necessarily, of course, much more modern of date than its botanical classification. Its *unrecorded* employment in the older centuries—which was, pretty surely, extensive; the combined silence of the historians of medical botany notwithstanding—appears to have been mostly among the uneducated, and practised after unskilled advice. The all comprehending herbalist John Parkinson, writing (in 1640) of the "Vertues" of digitalis as known at that date, informs his readers that: "The *Italians* have an usuall proverbe with them concerning this herbe, called by them *Aralda* which is *Aralda, tutte piaghe* salda: *Aralda* salveth all sores: for they use it familiarly to heale any fresh or greene wound or cut, the leaves being but bruised and bound too, and sometimes also they use the juyce in old sores to clense them, dry up their moysture, and heale them the more speedily, which it performeth by the bitter quality therein whereby it is found to be heating and drying, and clensing withall; so that when soever there is neede of a rarefying, or extenuating of thicke tough flegme and viscous humours troubling the chest or stomacke; the decoction or juice hereof made up with some Sugar or honey is available, as also to clense and purge the body both upwards and downewards sometimes, of tough flegme, and clammy humours, and to open the obstructions of the Liver and Spleene; and yet notwithstanding that these qualities are found to bee in it, there are but few Physitions in our times that put it to these uses, but is in a manner wholly neglected: It hath beene found by late experiences to be availeable for the Kings' Evill, the herb bruised and applyed to the place, or the juice made up into an ointment and used thereon: And it hath beene of later experience found also to be effectuall against the Falling sickness; that divers have been cured thereby; for after the taking of the decoction of two handfulls thereof, with foure ounces of *Polypody,* of the oake bruised made in Ale, they that have beene troubled with that disease 26 yeares, and have fallen once in a weeke or two or three times in a moneth, have not fallen once in 14. or 15. moneths, that is untill the writing hereof, which I thinke may be sayd to be an absolute cure, not to be presumed that after so long stay it should returne againe."—Thus we may conclude that the therapeutic reputation of digitalis was even at that date well founded, and we are prepared to find it occupying a place in the London Pharmacopœia of 1650. And I will just take the opportunity, in passing, of calling the reader's attention to the fact that the latter clinical effect—of the use of a fresh decoction of digitalis leaves in cases of epilepsy—does not appear to be often remembered. It has, however, been recently tried with good results in some cases; and the present writer can add the experience of his own observations (on the *infusion*) to the favorable testimony of others on this head.

Having taken a forward progressive stride of seventy years, we find the advances made in foxglove therapeutics fully mirrored in the monumental encyclopædia of *British Herbal* lore and science which was laid before the public by William Salmon in 1710. We are there informed, under the heading of "*The Qualities,*" that "Fox Glove is hot and dry at least in the Second Degree, Sulphureous and Saline; Aperitive, Abstersive, Astringent, Digestive and Vulnerary; Pectoral, Hepatick and Arthritick; Emetick, Cathartick and Analeptick." A goodly array of precious "qualities," surely! If we practitioners and scientists of the twentieth century could only translate them into concrete practical terms of our own coal tar therapeutics and bacteriological pathology, how much clinically happier we would be!! Then, under the heading of "*The Specification*" we learn that "It cures Consumptions, King's Evil, Green-sickness and Falling-sickness; also Wounds, old Sores and running Ulcers." The *Preparations* number half a dozen:—"1. *A Liquid Juice.* 2. *An Essence.* 3. *A Syrup.* 4. *A Decoction or Infusion.* 5. *An Ointment or Balsam.* 6. *A Cataplasm.*" Among the precious constituents of this list, the third item received the credit of the possession of qualities of value so transcendent that the author's account will, I feel pretty confident, be found worthy of a passing perusal—even from more than one point of view. Thus we learn that:

> *The Syrup, or Rob of the Juice of the Herb and Flowers made with Honey.* It is a specifick which transcends all other Vegetable Medicaments for the Cure of Consumptions; cleansing and healing after an admirable manner Ulcers of the Lungs. It opens the Obstructions of all the Viscera, cleanses, carries off, or expels the recrements of the Humors, by which means the daily Nutriment may be conveyed to all Parts of the Body. It may be given Morning and Night, four or five Spoonfuls at a time, according to Age and Strength: some advise Spoonfuls to be given in the Morning fasting in Mead, as much as Ten in the Morning, three Spoonfuls at Four in the Afternoon, and lastly, as much at going to bed. This Medicine has restored (where the Patient has not been past cure) beyond all Expectation. It cures a Phthisick or Ulceration of the Lungs, when all other medicines have failed, and the Sick esteemed past Cure. It opens the Brest and Lungs, frees them from tough Flegm, cleanses the Ulcer, and heals it, when all other Remedies act without effect. I have known it do Wonders and speak here from a long Experience. Persons in deep Consumptions, and given over by all Physicians, have by the Use of this *Syrup* or *Rob* been strangely recovered, and so perfectly restored as to grow fat again. I commend it as a Secret, and it ought to be kept as a Treasure. These few lines concerning this Medicament alone are worth ten times the Price of the whole Book. I am very confident of it, the deplorable wasted Patient, who has been long languishing in an inveterate and tedious Consumption, or a Phthisis if they make use hereof, will give me Thanks for this Notice, whilst they may have Reason enough to Curse even the Memories of Quacking Blood-suckers, Issue-makers, and Blister-drawers, who, as they may have possibly drained them of a fair part of their Estate and Treasures, would, by a Continuance under their Hands (for all their specious Methods of Cure), have fooll'd out of their lives too. But here is to be noted, that this Syrup ought chiefly or only to be made of the Flowers.

"*The Virtues*" of the other preparations are for the most part expansions of those catalogued by the author under the heading of "The Specification"—already quoted. The most conspicuous divergence of therapeutic individuality is displayed in the case of "*The Ointment or Balsam.*" This, the reader is informed, "is said to be one of the best Remedies for a scabby Head that is: it is also good against Pimples, Tettars, Ringworms, Scurff, Morphew, or other Scabbiness and Breakings out in any part of the Body." We find that "*The Liquid Juice*" "purges and cleanses the Lungs, Stomach, and Bowels; but ought to be given not in too great a quantity, because of its violent operation. It . . . works strongly both upwards and downwards, and prevails against the Scurvy, Dropsie, Jaundice, Gout, and Rheumatism; . . ."

This vision of the vigorous purgative action of digitalis appears and reappears in the clinical lucubrations of the authors of the grand old *Herbals.* It is of course, out of keeping with modern experience; and the only rational explanation that I have met with of an apparently gross misrepresentation of physical facts is that furnished by the suggestion of the eminent French therapeutist, Fonssagrives: "Je serais très disposé, pour mon compte, à croire que, quand its ont signalé la digitale comme susceptible d'être employée à titre d'émétocathartique, ils ont confondu la digitale vraie avec la *gratiole* appelée *petite digitale,* plante qui fait vomir et purge en effet à la dose de 4 à 10 grammes en infusion."

The development of the modern scientific therapeusis of digitalis dates from 1775—and from the English "midland capital." It was then and there that Withering, the friend of Cullen, the famous nosologist, produced his epoch making brochure on this plant, which he called the *Opium of the Heart* —on account of its obviously sedative effects on that organ, and the consequent slowing and steadying of the pulse. He also pointed out its "hydragogue" properties. Soon after this date Soleren published the results of his experiments with digitalis on the circulation in the turkey. Schiemann, in 1786, gave to the scientific world the results of his experiments on the dog and cat. Both these observers reported slowing of the cardiac pulsations. Beddoes, in 1801, announced that digitalis produced an increase of the blood pressure. He attributed this effect to augmentation of the contractility of the organic muscular fibres throughout the whole vascular system. In the same year Kinglake sustained the thesis that digitalis acts simultaneously on the heart and the arteries. Curiously enough, down to this date, and even till somewhat later, the sedative theory of Withering was the only one generally recognized in France—owing to the great authority of Bouillaud, by whom it had been introduced to the medical public of that country. Nevertheless, Beau, without appearing to have become acquainted with the subsequent hypothetical developments above referred to, and without having had recourse to special physiological experimentation, had already, in testimony of the results of his own clinical experience, given to digitalis the appellation of *quinquina du cœur* ("quinine of the heart"). This view of the action of our foxglove was adopted by the celebrated cardiac authority, Bouillaud; whose emphatically favorable opinion has in turn been rather contradictorily criticised by Fonssagrives in the past generation. "Le mot de Bouillaud: '*La digitale n'est pas l'opium, mais bien le quinquina du cœur,*' a fait fortune; je ferais toutefois remarquer que les termes de cette opposition n'étaient pas heureusement choisis, l'opium étant lui-même, comme j'ai essayé de le montrer, un *cardiaque,* au sens de *stimulant du cœur* que les Anciens attribuaient à ce mot."

And now, in the opening decade of our new century, which inherits and enjoys the results and capitalized attainments of a predecessor more successfully scientific and more satisfactorily experimental than any (or all) of those that had gone before, we can claim, beyond fear of contradiction, the permanent establishment of at least three statements of cardinal fact, as representing unquestionable results of the ingestion of digitalis: 1. Slowing of cardiac movements. 2. Increase of contractile energy of cardiac muscle. 3. Elevation of arterial pressure. But—as would be anticipated by all readers who have had a certain amount of experience of human nature in general, and of its aspects and developments in connection with physiological investigation in particular—the multiplex theoretical explanations of these phenomena which have hitherto been advanced even still continue to present very marked degrees of divergence.

Like most other vegetable products of which the actively essential constituents exert, when taken into the circulation, a very powerful influence upon the conditions and phenomena of animal life, digitalis owes its peculiar powers—for good and for evil—to the presence of certain definite chemical compounds, which can be isolated therefrom in the crystalline form. The "active principle" which was first obtained from this plant was, in accordance with the usual mode of practice in the nomenclature of organic chemistry, named *digitaline* by its discoverers, MM. Homolle and Quevenne. This chemical product came soon after to be distinctively known as "amorphous" digitaline—when M. Nativelle had succeeded in isolating a *crystalline* compound, which was regarded by its discoverer as "true" digitaline,—the real active principle of the *amorphous* substance. His view seemed to be corroborated by the fact that the strength of the preparations of the amorphous digitaline was hopelessly unreliable, while those of the new crystalline substance were fairly trustworthy in the uniformity of their anticipated effects. But, although admittedly much more uniform in physiological power than was the amorphous, it was soon discovered that even the crystalline digitaline of Nativelle offered no reliably safe standard. The more elaborate researches of the German pharmacologist, Schmiedeberg, soon afterward brought our knowledge of the organic chemical principles of the digitalis plant to a state of approximate accuracy. Of these, the items which have been isolated, baptized, and utilized—with results apparently satisfactory—are:—

Digitalin: A granular, if not quite satisfactorily crystallizable, glucoside; which possesses in a high degree the characteristic physiological powers of the maternal plant. So much so, indeed, that Kiliani and some others would distinguish it as *digitalinum verum,* and regard its employment as the most effective means of administering digitalis, and securing the physiological effects thereof on the animal economy. It displays all the specially characteristic influence on the heart, while possessing the great clinical advantage that its effects are not cumulative.

Digitalein: An amorphous glucoside, or—more probably—a mixture. Its action on the heart is also non-cumulative; it also offers a special recommendation for use in the fact that it causes no local irritation when injected subcutaneously.

Digitotoxine: Regarded by some as an alkaloid;

is, at least, certainly known to be not a glucoside. This is the most powerfully toxic and dangerous of all the constituents of the foxglove plant. Its effects are cumulative—although to a degree not yet definitely measurable.

Digitonin: A glucoside constituent, which forms the major proportion of the total amount of the principles of this chemical group that exist in the living vegetable. Worthy of special note is the fact that it possesses an influence on the inhibitory mechanism of the cardiac movements which is distinctly antagonistic to that of digitalis taken in the mass.

Digitin: A crystalline principle which is physiologically inert.

Homolle gave his digitalin the chemical formula $C_{20}H_{32}O_7$; Nativelle represented his own by $C_{52}H_{40}O_{15}$. But the meridian light of scientific certainty has not yet quite penetrated to the principles of the formulæ of the "active principles" of foxglove; so we will just permit them to pass at this stage, without further question. The reader will, pretty surely, with a sigh of relief admit the desirability of so doing; on learning that we have also read of the discovery and baptism of a long array of other chemical—and very complex—compounds and "principles" in the leaves and roots of the foxglove, and the products thereof: *digitoresin, digitonéin, digitogenin,* and *paradigitogenin* have been "derived" from digitonin; *digitaliresin* from digitalein; and *toxiresin* from *digitoxine.* We have also been informed of the existence of *digitalose, digitasolin, digitalirétin, paradigitalétin, digitolein, digitalacrin, digitalosmin, etc.* Then comes in order, of course, the inevitable series of organic acids: *digitalic, digitaleic, digitaloic, digitaloinic, antirrhinic,* etc.

Experimental observers have described three *degrees* of the effects of the administration of digitalis, arranged according to the amount of dose. And they also have made—respectively—two, three, and four *periods* of the manifestations of the indicative symptoms. The three degrees are: 1. Pulse slow and regular; 2, pulse quickened; 3, pulse slow and irregular. The *safely* effective *therapeutic* dose produces results not transcending the first of these three degrees. And in their manifestation two time periods are definable: 1. Of physiological action; 2, of gradual return to the normal conditions. A dose somewhat larger realizes three periods: 1. Pulse slow; 2, pulse quickened; 3, return to the normal rate. The administration of an actually *toxic* dose furnishes four periods: 1. Pulse slow; 2, pulse quickened; 3, pulse slow and irregular—followed by a cessation more or less prolonged; 4, death, or return to the normal state. According to the eminent German investigator, Schmiedeberg, the first effect of digitalis is to increase the elasticity of the walls of the heart—as other observers have phrased it, the activity of the diastole. Hence results the "negative intraventricular pressure" which was indicated by Goltz and Gaule. This increase of elasticity produces the augmentation of the volume of the pulse which precedes the elevation of the blood pressure—thus (as a superficially seeming paradox) independently of the latter. Kaufmann studied, in succession, the action of digitalis on the heart and on the arterial system, respectively. With regard to the first, there occurs at the outset a distinct fall in the number of beats per minute. The cause is to be found in the resulting stimulation of the inhibitory pneumogastric nerve, at its bulbar origin and at its cardiac terminations. It is not a bulbar stimulation only, as Traube thought; for after preliminary section of the vagus the slowing effect is sometimes distinctly observable. Other theories have, however—as might readily be anticipated—been advanced, which would account for the physiological effect on the cardiac rhythm by: increase of the arterial tension; direct action of the drug on the cardiac muscular fibres; stimulation of the vagi nerves—associated, by intervention of reflex action, with increase of the cardiac pressure; paralysis of the accelerator nerves of the heart. The last mentioned causal hypothesis is, however, completely refuted by the fact that the period of slowing is followed by one of acceleration. That interval of rhythmic retardation may, however, be completely absent when the dose has been sufficiently large. With regard to the imputed direct action on the muscular walls of the heart, there is one experimental fact which is worthy of special emphasis: the characteristic influence is manifested when the apical segment of the heart has been excised and placed in a solution of digitalin. As the intracardiac motor nerve ganglia are located in the basal region of the organ, this experiment is surely calculated to prove—as conclusively as physiological data well can—that the specific influence of this substance is exerted directly on the muscle fibres.

Under the influence of digitalis, the pulse may become dicrotic, or tricrotic—with corresponding modification of the cardiac movements. After the absorption of fatally toxic doses, the heart stops—tetanically—in systole; the final contraction commencing at the apex, and passing thence toward the base of the ventricles. After these have become quiescent, the auricles continue to beat for some time longer. It must, however, be emphatically stated, for the benefit of the earnest inquirer, that these well defined cardiac phenomena, which are so distinctly observable in case of the frog, are by no means so clearly marked off in the mammal.

Next in importance to its influence on the cardiovascular system, is, of course, that on the renal organs and their function. And it is, at this date, a matter of curious—sometimes almost painfully amusing—interest to note the vast series of contradictory statements and announcements of opinion, with the explanations and elucidations of the same, which aforetime inundated the broad pages of the literature of clinical therapeutics and experimental physiology, even on this individual topic alone. The famous poet-physician and botanist, Erasmus Darwin (whose grandson, Charles, so effectively displayed the influence of atavistic transmission of genius to his contemporaries of the past generation) was a pioneering contemporary of Withering in the exploration of foxglove therapeutics; and those two physicians were the actual founders of the renal reputation of this potent drug. The great authority of Cullen (of *Nosology* and *First Lines* fame) was added at a fairly early stage; and in the opening years of the nineteenth century that of Bidault de Villiers (*Essai sur les propriétés medicinales de la digitale;* Paris, 8 Fructidor, An XII.), who constituted himself the original herald of the renal reputation of digitalis to the medical profession in

France. But with the usual perversity of human nature in general, and of the therapeutic section thereof in particular, we find ourselves in the following generation face to face with a series of "authorities" who confidently deny the existence of the diuretic powers which had been attributed to this agent: Germain, Durosiez, Royle (in England), &c. And between those two antagonistic camps of the armies of clinical conquest, there actually sprang into view a moderate one of "liberal unionists"(!), who defended the compound thesis that digitalis exerted no diuretic power in the case of a healthy subject, but that it did in presence of the modifications produced by disease—by removing the pathological cause of the scantiness of the renal secretion. In 1872 we find Hirtz enunciating, in *ex cathedra* style and tone, the statements that: "Elle n'est diurétique que dans certains états pathologiques, dans ceux oú la circulation générale est entravée. En régularisant le cours du sang dans les différentes parties et en particulier dans le rein, elle amène le fonctionnement régulier de cet organe et par conséquent une augmentation dans la sécrétion tandis qu' à l'état physiologique et dans les maladies où la circulation n'est pas en jeu, elle perd toute propriété diurétique." The usual ingenuity of scientific obstinacy!—still more curiously scintillating in the affirmation of Kluyskens, that digitalis displayed a selective action in the elimination of the fluid of *hydrothorax!*

The cardiac position of foxglove therapeusis is now, of course, so conspicuously placed as to be familiar to all practitioners There remains, inevitably, a marginal "borderland" territory, still sacred to the exercise of clinical and scientific disputation. Trousseau was, as might be expected, one of the earliest experimenters with this remedy in "l'effroyable éréthisme de l'arbre circulatoire" which characterizes Graves's disease—but does not seem to have derived much clinical satisfaction from the result. The tonic contraction of the muscular walls of the arterioles was an attributed effect to which was owing its employment in *hæmoptysis* and other hæmorrhages of that class—as in the treatment of *metrorrhagia* by Howship Dickinson (of Dublin). Its specially sedative action on the circulation, and all the active organs thereof, led to its employment in inflammatory conditions—by Clutterbuck, and Hosack, and (on a very large scale, indeed), by Rasori of Milan, who proposed to substitute its employment for the too prevalent practice of venesection. From the same source of inspiration came the suggestion of its use as an *antipyretic* agent: in *rheumatic fever,* in *typhoid fever,* in *acute tuberculosis,* and in *pneumonia.* And as the effects thereof were not more discouraging than those of any other of the innumerable specifics which have been applied toward the cure of one or more of that very familiar series of febrile disorders, its special advocates were afforded excellent opportunities of expanding their briefs. Traube reported its successful employment in *puerperal fever.* All readers are, of course, familiar with the somewhat sensational story of the accidental discovery of its efficacy in *delirium tremens,* by Jones (of Jersey); fewer, probably, with its (more especially French) reputation as an *anaphrodisiac* and antiblennorrhagic agent. Duclos resuscitated the old treatment of *epilepsy* with digitalis—professing to regard the syndrome as very often symptomatic of scrofulous disease, and digitalis as a specifically antiscrofulous remedy. Kluyskens thought that it would prove efficacious in cases of epilepsy in which the occurrence of the phenomena was symptomatic of serous effusion in the substance of the brain, or into the cavities of the organ. But, in the case of a remedy possessed of powers so pronounced and so peculiar as those of digitalis, if all that it has done, or can do, or was believed (or said) to be capable of doing, or was employed for the purpose of—-or in the hope of—doing, were written down: why, even the *κόσμος* itself would prove too narrow!

Its cardiac powers and properties are, and, pretty surely, will for all future scientific clinical practice continue to be, those which are principally utilized. Deficiency of valvular competency, with insufficient compensatory hypertrophy: such condition will always be the great indication. And even in aortic incompetency—the approximately unique valvular herald of *sudden death*—the drug is often employed with advantage (of course, with observant care, and in specially small doses) when the compensatory hypertrophic *vis a tergo* is markedly deficient. Further details of clinical and toxological opinion and advice on this important subject may with advantage be sought in the monumental textbook of *Materia Medica* by Sir Lauder Brunton, whose professional skill is as convincingly demonstrated in its pages as was his scientific zeal in the carrying out of the elaborate (and dangerous) experiments which his enthusiastic pursuit of knowledge led him to make on his own person with this same digitalis, its active principles, and the various preparations of each.

The peculiar, and practically important, *cumulative* property of digitalis is, of course, (as in the case of aconite), dependent upon the slowness of its elimination from the system.

A few words, before concluding, on the fataliy toxic effects produced by an over dose of digitalis, or of its more active constituent principles. They have seldom been so concisely arranged and graphically expressed as in the sentence formulated by Murray in 1793: *Excitat nauseam, vomitum, alvique purgationem, vertiginem, oculorum caliginem, lotii uberiorem secretionem, sudores frigidos, deliquia animi, anxietatem vehementem, cardialgiam, singultum, convulsiones, et ipsam aliquando mortem.* One of the special facts to be noted in connection with the toxicity of digitalis is that, notwithstanding the very great potency of the drug, not more than a comparatively small proportion of the (more than possibly) lethal doses have been followed by a fatal issue. This peculiarity is largely due to the vomiting which is so prone to occur soon after ingestion; while the characteristic cardiovascular effects are often comparatively very late in course of development. The vomiting produced by digitalis is also distinctly violent in its movements, and pertinacious in its recurrence, as was found by Sir Lauder Brunton in his own (personal) experience. Hence it is specially effacious in clearing out the contents of the stomach.

The tracing of this poison in fatal—or otherwise questionable—cases has certainly not been, up to the present, quite satisfactorily or reliably simplified by our most advanced chemical and physical knowledge. In this respect, the position of *digitalin* is somewhat curiously similar to that of *aconitine*. This is, surely, an interesting coincidence; one which involves two vegetable drugs of unrivalled potency—in directions, too, which, clinically speaking, are almost diametrically opposite. And the similarity is most curiously punctuated in the report of the single case of digitalin poisoning which, so far as I know has been followed by the conviction and execution of the poisoner (with exhaustively full and skilled report); that of Dame de Pauw. (*Annales d'hygiène publique et de médecine légale*, xxii, 111, 1864.) Roussin and (the celebrated medicolegist) Tardieu, were the "experts" of the inquest. The body was exhumed thirteen days after death. The most careful and exhaustive search for mineral poisons gave wholly negative results. But suspicions had been aroused by the discovery of digitalin in the possession of the accused, whose mistress the deceased woman had been. The latter had been in good health the day before her death. No natural cause of a sudden termination of life was revealed by the postmortem examination. On these (and various corroborative circumstantial) grounds of suspicion MM. Tardieu and Roussin drew up a series of *conclusions*, eight in number—of which the more essential matter is contained in the first half:

1. La veuve de Pauw est morte empoisonée;
2. La poison qui la tuée est de la nature de ceux qui, empruntés au regne végétal, peuvent ne pas laisser de traces caractéristiques dans les organes, ne pas être isolés par l'analyse chimique, mais que révelent leur présence par leurs effets et sont décelés par l'action meurtrière qu'ils exercent sur les corps vivants;
3. Nous avons retiré non seulement des matières vomies par le veuve de Pauw sur la parquet de la chambre, mais aussi des organes soumis à l'analyse un principe toxique très-énergique, qui, expérimenté sur les animaux, a produit des effets analogues à ceux qu'a ressentis la veuve de Pauw, et les a fait périr de la même manière;
4. Ces effets et cette action ont une grande ressemblance avec ceux de la digitaline, et sans toutefois que nous puissions l'affirmer, de fortes présomptions nous portent à croire que c'est à un empoissonnement par la digitaline qu'a succombé la veuve de Pauw.

34 YORK STREET.

HEXAMETHYLENAMINE IN THE TREATMENT OF A CASE OF MENINGOCOCCUS MENINGITIS.

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In Crowe's first report[1] of his studies on the excretion of hexamethylenamine, he dealt more particularly with the excretion of the drug in the bile and pancreatic juice, but he called attention to its appearance also in the cerebrospinal fluid. An infected cerebrospinal fistula occurred after a suboccipital operation for a cerebral tumor; hexamethylenamine was given, thirty grains daily, and was found in considerable quantity in the purulent discharge; the patient recovered, and the usual outcome of such a condition, a fatal meningitis, did not result.

Crowe's second report[2] concerned more particularly the excretion of hexamethylenamine in the cerebrospinal fluid. From a hydrocephalic patient a long escape of cerebrospinal fluid was permitted. This fluid was collected in tubes before and after the administration of forty-five grains of hexamethylenamine each tube was inoculated with *Streptococcus pyogenes* and incubated for twenty-four hours, agar plates were then made, taking one loopful from each tube. There was a rapid and striking decrease in the number of colonies that grew on the plates made from fluid collected after the administration of the drug. Animal experiments were then made, forty rabbits and dogs being used. The animals were inoculated subdurally with virulent streptococci. In those treated with hexamethylenamine the onset of symptoms was delayed and the animals lived longer than the controls. One dog was given twenty grains every four hours beginning twelve hours before inoculation, and this dog recovered from the meningitis, became apparently well, but on the fifteenth day general neuritis developed suddenly and the dog was sacrificed. Cultures from the cerebrospinal fluid were negative. Crowe concludes his report by recommending the prompt administration of hexamethylenamine in all cases in which meningitis is a possible or threatened complication, or even when meningeal infection has actually occurred.

Rowell[3] reports the use of hexamethylenamine in a case of erysipelas in a nineteen months old infant in whom symptoms of meningitis developed. The diagnosis was not confirmed by lumbar puncture the course was typical of erysipelas excepting meningeal signs, and hexamethylenamine was given in extremely small doses—one grain every four hours. The case, therefore, is not convincing, and one is rather inclined to look upon the meningeal phenomena as those so easily produced in infants by toxæmia.

Acting upon the suggestion contained in Crowe's first paper, we treated in November, 1908, a case of meningococcus meningitis with hexamethylenamine, and we were able to demonstrate easily its presence in the cerebrospinal fluid. Flexner's serum was asked for immediately when the case was diagnosticated, but unfortunately it was not received, owing to the great distance, until the day of death when the patient was moribund.

CASE. Meningococcus meningitis; gram negative intracellular and extracellular diplococci in spinal fluid; cultures positive for meningococci; patient treated with hexamethylenamine; late injection of Flexner's serum; prolonged course; death.

Hospital; No. 16,137. The patient was a Greek, aged twenty-two years, fireman on dredge *Ancon*, lived in Cristobal, had been on Isthmus of Panama eleven months, admitted November 13, 1908. The history was that of malaria for five days, and estivoautumnal rings were found in the blood films. On examination, the patient was well nourished; general condition good; herpes labialis; a few crepitant râles scattered in each lung; heart dulness, 9 cm. to left, a soft systolic bruit was heard at apex not transmitted to axilla; spleen palpable.

Quinine was given immediately and the maximum temperature was 99.5° F. on November 13th; temperature was normal November 14th, but began to rise at 4 p. m., on November 15th, and by midnight had reached 103.2° F. This rise marked the onset of meningitis.

November 16th:—Patient irritable, restless, moaning, complained of severe headache, vomiting, no convulsions. The eyeballs moved incoordinately, pupils small, equal and reacted to light and during accommodation; no strabismus or ptosis. Head not retracted, but neck muscles rigid, and attempt to flex head painful. Kernig's sign marked, plantar reflex diminished, no Babinski reflex, patellar and cremasteric reflexes absent. There was Cheyne-Stokes respiration with prolonged periods of apnœa. A macular eruption was present over limbs and in palms of hands. Blood smears showed crescent forms of the malaria parasite but no shizonts. Leucocytes, 13,200. Differential count: Polynuclears, eighty-four per cent.; large mononuclears, eight; small mononuclears, eight. Lumbar puncture: Spinal fluid turbid, white, increased in quantity; pressure, 320 mm. The fluid was allowed to stand over night, and when examined the next morning there were found numerous pus cells, and a few intracellular Gram negative diplococci with the morphology of meningococci. Cultures from this fluid were negative.

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[1] *Bulletin of the Johns Hopkins Hospital*, xix, p. 109, 1908.
[2] *Ibidem*, xx, p. 102, 1909.
[3] *Journal of the American Medical Association*, liii, p. 1641, November 13, 1909.

November 17th:—Symptoms and signs unchanged until lumbar puncture at 3.30 p. m., after which irritability and restlessness subsided and patient ceased to complain of pain; the rigidity of the neck and Kernig's sign became less marked, and nourishment was retained. Lumbar puncture: 60 c.c. of turbid, milky fluid under high pressure was obtained. This contained 18,360 cells to every c.mm., chiefly polynuclear leucocytes, a few red blood cells, and a few intracellular and extracellular Gram negative diplococci. Cultures on blood serum and glycerin agar positive for meningococci.

November 18th:—Symptoms and signs marked, retention of urine. As this was the first case of meningococcus meningitis that had occurred in Panama, we were not provided with Flexner's serum, which, however, was cabled for at once. Hexamethylenamine was prescribed, ten grains on the evening of November 18th, and fifteen grains, four times daily afterward.

November 19th:—Leucocytes, 24,000.

November 20th:—Condition about the same. Lumbar puncture, 7 c.c. turbid fluid under but little pressure obtained. Test for hexamethylenamine positive.

November 22d:—Patient at times delirious but usually rational; took nourishment well; retention of urine. Pupils equal and reacted to light and during accommodation; marked rigidity of neck; Kernig's and Babinski's signs present; slight patellar reflex; well marked ankle clonus.

November 23d:—Lumbar puncture, 10 c.c. of slightly turbid fluid, pressure 137 mm., 3,030 cells (chiefly polynuclear leucocytes) to each c.mm.; no organisms found and cultures negative. Fluid diluted with nine parts of water gave a color about equal in intensity to that given by a 1 to 2,000,000 solution of formaldehyde (Hehner's test, modified). The cells in the fluid were diminished from 18,360 before hexamethylenamine was administered to 3,030 to each c.mm.; meningococci were present in smears and cultures before, absent after.

November 24th:—Leucocytes, 22,500.

November 26th:—Temperature had been remittent between 100° and 103.3° F. during past week, averaging from 101° to 102° F. Symptoms and signs not improved. There was now more marked rigidity of the neck with severe headache, marked tremor and subsultus. "Risus sardonicus." Pupils dilated, Kernig's sign marked, Babinski's reflex doubtful, patellar and cremasteric reflexes present. In the afternoon patient was in stupor and difficult to arouse, Cheyne-Stokes respiration, involuntary defæcation. Lumbar puncture, 50 c.c. very faintly turbid fluid under 290 mm. pressure (not examined for pus and meningococci).

November 29th:—Temperature since the 26th was more markedly remittent, varying from 100.5° to 104° F. Patient was growing weaker. There had been no disturbance from hexamethylenamine, which was increased to-day to twenty grains, four times daily (eighty grains daily). Lumbar puncture, 40 c.c. slightly turbid fluid under pressure of from 412 to 450 mm., cells (nearly all polynuclear), 1,740 per c.mm., moderate number of Gram negative diplococci, cultures on blood serum, blood agar, glycerin agar, and agar-agar negative. A dilution of 1 to 40 of the fluid gave a color reaction of about the same intensity as that given by a 1 to 2,000,000 solution of formaldehyde.

December 1st:—Patient's condition was growing worse, marked tremor, patellar reflex present, no Babinski reflex, still marked Kernig's sign and marked rigidity of neck muscles. Pupils still reacted to light. Heart and lungs negative. Decubitus ulcer over right trochanter.

December 5th:—Pulse rapid, regular, small, tension low. Respiration, Cheyne-Stokes. Heart and lungs negative. Numerous pustules over back.

December 8th:—Temperature had been ranging higher, pulse and respiration had been growing more rapid, and patient was becoming weaker. He was now moribund. Leucocytes, 17,800. Flexner's serum received to-day. Lumbar puncture, 5 p. m.: About 6 c.c. of fluid obtained, moderately cloudy, pressure not increased. 990 cells per c.mm. (nearly all polynuclears), fairly numerous extracellular and intracellular, Gram negative diplococci, cultures on blood serum positive for meningococci, 1 to 20 dilution of

SUMMARY OF CLINICAL EXAMINATIONS.

Date, 1908.	Leucocytosis.	Lumbar puncture, quantity.	Pressure in m.m.	Leucocytes in fluid per c. mm.	Meningococci in fluid.	Cultures from fluid.	Dilution of fluid giving Hehner's test (modified).	Dilution of formaldehyde giving test.	Doses of hexamethylenamine.
November 16th	13,200	increased	320	numerous	few	after 16 hours negative	....	....	....
November 17th	....	60 c.c.	high	18,360	few	meningococci	...	....	....
November 18th	....	....	....	....	....	....	.. .	....	10 grains, p. m.
November 19th	24,000	....	....	....	....	....	....	....	15 grains every four hours.
November 20th	....	7 c.c.	....	numerous	....	....	not diluted	....	15 grains every four hours.
November 23d	....	10 c.c.	137	3,030	none	negative	1 in 10	1 in 2,000,000	15 grains every four hours.
November 24th	22,500	....	....	....	....	....	....	....	15 grains every four hours.
November 26th	....	50 c.c.	290	....	....	....	....	....	15 grains every four hours.
November 29th	....	40 c.c.	412-450	1,740	few	negative	1 in 40	1 in 2,000,000	20 grains every four hours.
December 8th, death 8 p. m.	17,800	6 c.c.	....	990	moderate	meningococci	1 in 20	1 in 2,000,000	20 grains every four hours.
December 9th, autopsy 8 a. m.	....	....	....	purulent	moderate	....	....	....	....

fluid gave test of about equal intensity to that given by a 1 to 2,000,000 solution of formaldehyde. Twenty-eight c.c. of Flexner's serum slowly injected into spinal canal. Patient died at 8 p. m.

Blood pressure:—During the first fourteen days of illness the blood pressure was taken morning and evening with the Riva-Rocci instrument, 12 c.m. rubber bag with leather cuff. For seven days it ranged between 110 and 135 mm. The highest point was reached after lumbar puncture on November 20th. During the next seven days the pressure continued about normal (110 mm.) with slight upward variations.

Autopsy:—Purulent cerebrospinal meningitis with Gram negative intracellular and extracellular diplococci in the exudate; purulent sphenoid sinusitis and purulent otitis media of the right ear with Gram negative diplococci; catarrhal inflammation of the left ear and antrum; early bronchopneumonia; calcified tubercles in lung; fibrous pleuritis.

Experiment:—Emulsions of thirty-six hour old cultures of meningococci (isolated from this case) in salt solution and in 1 in 50,000 and 1 in 200,000 formaldehyde were allowed to stand thirty minutes, and one hour and fifteen minutes. Transplants were then made. Growth was good in all transplants, i. e., formaldehyde in the concentrations used had no effect in the time given on the viability of meningococci. However, the short exposure of the cultures to formaldehyde did not reproduce conditions in the spinal fluid of patients in whose fluid hexamethylenamine (or formaldehyde) was constantly excreted.

The apparent effect of the drug upon the organisms of the spinal fluid, the comparatively long duration of an apparently very acute infection treated with hexamethylenamine, together with its demonstrated presence in the spinal fluid in strengths of from 1 in 50,000 to 1 in 200,000, indicate that the drug might be useful as an adjunct in the treatment of meningitis cases or as a substitute for Flexner's serum in meningococcus meningitis should the serum not be obtainable or delayed. More weight is given to this view by the recent observations of Frothingham[4] on the effect of enormous doses of hexamethylenamine on guinea pigs. His results indicate that the drug may be given safely in very much larger doses than I used. Since his article appeared, I have given it in gonorrhœal arthritis in doses of thirty-five grains every four hours (210 grains daily) without untoward symptoms arising. There was no apparent benefit, however.

As an addition to the statistics bearing upon the use of Flexner's serum, this case is of course of no value, since the patient was moribund when the serum was given, and died three hours later.

Two other cases of meningococcus meningitis were admitted to the hospital during the illness of this one. Both were in negroes, and both terminated fatally within three days. In one pneumococci, also, were present in the spinal fluid. No connection could be traced between the three, no source of infection could be found, and no other cases occurred during the next twelve months. Then, within a few weeks, two, and possibly three more cases occurred. Apparently there was no connection between these. Two negroes died very quickly, one before Flexner's serum could be obtained, the other a few hours after the first injection. In this second case meningococci could not be demonstrated certainly in smears either before or after death, and cultures were negative at both times. The third infection of this group occurred in a white man. He was treated with Flexner's serum and recovered. No other cases have occurred during the succeeding five months.

In conclusion I wish to thank Colonel W. C. Gorgas, chief sanitary officer, for permission to publish this report.

WHAT IS A RATIONAL DIET?

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An universally satisfactory answer to the title of this paper would be about as easy as How Old Is Ann? I shall not attempt to settle the question. None are so blind as they who will not see; the practitioner and patient have absorbed ideas along the line of dietetics which cling as close as the proverbial brother. Perhaps no subject enjoys a wider range of interpretation than this eternally omnipresent question of what to eat.

If the layman believes life would be unbearable should he be compelled to abstain from potatoes, then the physician who has the temerity to proscribe their use is in grave danger of losing his patient to one of those fellows who says, "Potatoes? Why they couldn't hurt any one. Sure, eat what you want." Or the neurasthenic who declares that she would just simply die if she couldn't have her cup of coffee for breakfast, perhaps drifts into the care of some one who gives carte blanche to the whims of the appetite.

Certain dietaries are given in our textbooks for guidance in the treatment of disease. An ideal diet is described for a normal human being, and it would seem that it were but necessary for the doctor, after making his diagnosis, to copy a corresponding diet and give it to the patient. And then another one later for the convalescent period, and the ideal result would be obtained. And is not this an all too common practice? Is it rational?

I believe that a cut and dried diet list for a condition in general is not only to be criticised on account of its inaccuracy, but it should be condemned as dangerous to the life and health of some patients. An ideal diet for any one class of patients does not exist.

I contend that unless a physician has a practical knowledge of the physiology of digestion and has studied foods in their relation to nutrition in both normal and pathological conditions, he had better ignore the subject entirely. Better admit to the patient: "Eat what you want, what seems to agree; eat plenty, take good care of yourself, and we will worry along with the hope that Nature will step in and in some mysterious way bring you out of this and save my bacon by covering up my ignorance." Nature often does wonders in spite of our very best efforts to destroy her works.

From a layman, one Horace Fletcher, we are told that a square meal may be had on a cracker or a cherry or a bite of meat, by simply chewing the food for a portion of the day. And Upton Sinclair has spun several columns in one of the popular magazines in telling how stomach ills vanish by his system of fasting for many days at a time. Professor Chittenden has contributed to the dope sheet in declaring that we can live and move and have our being on about one half the amount we eat. As these gentlemen seem to be in harmony with their ideas, think what a blow the food trust would be dealt if we ate but half what we now do and then fasted eight or nine days in every month.

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[4] *Archives of Internal Medicine*, iv, No. 5.

Ralstonism, raw food, the no breakfast theory, and a dozen other dietetic fads all have a specific principle in view, and maybe they all have a serious deficiency. The most of them are exploited in the popular periodicals and the layman adopts the new idea as a Heaven sent blessing—a panacea for present ills. Let us not fall into the trap of allowing these enthusiasts to mislead us. Let us either know the subject thoroughly and prescribe a diet for the case in hand, or ignore it and avoid responsibility. I agree with Woods Hutchinson that there are dangers in undereating. By undereating I mean the taking of food which is not only insufficient in quantity, but which is deficient in the elements which the body requires for its normal maintenance. Most of the systems of dietetics ignore the latter in some particular. The proper proportion of carbon, hydrogen, oxygen, sulphur, phosphorus, etc., in needed amount is a subject requiring scientific attention. Its application to the sick is not possible unless the physician knows its proper application to the healthy, normal individual. And after all, after this knowledge is gained the next and equally important task is the judging of the patient under treatment; not a class of men and women who are ill, but the one before you. He is not like any other being and he is a study in the application of dietetics.

And how can we give this patient a rational diet in disease and in health? How can we build up waste tissue, improve muscle tone, enrich blood, raise the opsonic index, and bring about a change to the normal unless we are able to learn his wants? The answer is plain. The study of the physiology of digestion will give the key to the general principle. With this key we can unlock the door leading to the realms of clinical diagnosis. Then, with serious study of food products we can apply a rational diet, not overlooking for an instant the man, the particular case for application. Then, and not till then, can we say that we have found a rational diet.

You will see that I have not answered the question in terms of chemistry. My idea of a rational diet is one gained by scientific study; honest, intelligent investigation; and an intelligent application of it individually. That is a rational diet.

SUITE 409, DEARDORFF BUILDING.

THE WATERS OF BAD-NAUHEIM AND THEIR THERAPEUTIC EFFECT.*

By H. ENGEL, M. D.,
Bad-Nauheim, Germany.

I desire to call your attention to a balneatic station which is well known throughout the world, and has become, so to speak, an international prescription specially employed for diseases of the heart and arterial system. This is Bad-Nauheim in Germany, near Frankfort on the Main.

Three great springs, each with specific qualities and surrounded by different bathing establishments, burst forth like champagne from the bottle. So strong is the natural pressure of the carbonic acid gas contained in the largest spring that its waters spout to a height of twenty-two metres. On account of this great natural pressure it is unnecessary to force the water into the bathing tubs, which it enters without having come in contact with the atmosphere, and thus retains the whole original quantity of carbonic acid gas (from 1,511 to 2,021 grammes to a litre of water).

The simplest bath, the one with which the "cure" is commenced, is the *Thermalbad*. In this the waters from all the springs are collected and exposed to the open air in large reservoirs. They thus lose a large amount of carbonic acid, and the bath is essentially saline, for the springs also contain a large quantity of salts, especially of sodium chloride (from 20 to 27 grammes to each litre of water). In all the baths except the *Thermalbad* the waters from the several subterraneous springs are collected in subterraneous reservoirs, hermetically closed, and all their carbonic acid gas preserved.

In the Sprudelbad the water is almost entirely unchanged from the condition in which it issues from the springs. The *Thermalsprudelbad* is of intermediate properties, a portion of the water used having lost its carbonic acid. The altered and unaltered waters are combined only in the bath tub. By the successive use of these several varieties of bath, the strength of the bath is gradually increased with the tolerance of the patient. The composition of the three springs differs in the quantity of salts and of carbonic acid contained. This adds another means of gradation in the strength of the baths and permits a total of nineteen varieties of bath at Bad-Nauheim. Another important character of these springs is their natural warmth, which permits their use without the application of artificial heat, as addition of hot water, etc. Their degrees of heat so differ that the coldest (29.90° C.) contains the greatest, and the warmest (34.4° C.) the least amount of carbonic acid. It is thus possible to begin with baths weakest in carbonic acid and at the same time highest in temperature, and in the course of treatment to gradually diminish temperature while augmenting the amount of carbonic acid. This point is very important, as the efficacy of the carbonic acid bath increases as its temperature diminishes. Furthermore, the advantages of the Nauheim Sprudelbad are due to the extraordinarily fine subdivision of the carbonic acid. Such a subdivision has never been attained in artificial baths. During immersion in the Sprudelbad the skin of the patient is uniformly covered with little gaseous bubbles, and this "carbonic acid skin" can be renewed three or four or more times if displaced by movement of the body.

For thirty years the reputation of Bad-Nauheim as a special balneatic station for the treatment of cardiac and arterial disease has constantly increased. Such a duration is an evidence that there can be no error in therapeutics. The balneological therapy of Bad-Nauheim is to-day the most perfect of that of any of the gaseous baths. The specific action of these baths upon the circulation becomes a matter for consideration.

The absorption of carbonic acid by the skin and lungs is slight and without therapeutic value. It would, if it did occur, be of no benefit to the patient whose blood in cardiac disease is already surcharged with carbonic acid. The effect of the baths depends solely upon a change in the circulation and in cardiac action. This change is primarily a great dilatation of the capillaries of the skin which facilitates the movement of the blood. There may perhaps be also a reflex from the sensitive cutaneous nerves affecting the cardiac action. It was formerly believed that the irritation in the bath of the fine network of nerves in the skin was due to a chemical action of the carbonic acid. As a result of new researches it has been discovered that the irritant effect of the carbonic acid bath depends greatly upon its temperature and varies with it. If the temperature is below 34° C. it is quite different from what it is, for example, when the temperature is 30° C. or less.

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*Paper read before the International Medical Society of Cairo Egypt, April 14, 1910.

Let us first consider the effect of a bath of 30° C. I have controlled the frequency of the pulse, the pressure of the blood, and the respiration in normal persons. During the first minute or half it produces a strong contraction of the capillaries, and the bather has an impression of cold. All his blood rushes from the surface to the heart and the interior of the body. This concentration of all the blood toward the heart, joined to the initial shock, causes an acceleration of the cardiac contractions. The frequency of the pulse and the cardiac tension increase; the respiration also becomes more frequent. But following this short period, and when the body is covered with the bubbles of carbonic acid, reaction commences. The capillaries dilate enormously, a fact indicated by an intense redness of the skin. It is at this time that the patient begins to feel an agreeable sense of warmth, an effect produced by the carbonic acid which the bath contains; but this action is limited to the skin and its capillaries. The peripheral arteries remain under the influence of the cold of the bath. This condition persists for a long time. The pulse grows softer, the respiration becomes deeper. Even an hour after the bath the pulse is stronger and slower and its tension still greater than before. It seems, however, that the heart rests even while its action is stronger.

Let us now consider the effect of a bath of 35° C. from the same spring. No shock is felt upon entering the bath. The contraction of the capillaries and peripheral arteries is not produced. The pulse is not accelerated and the arterial tension is not increased. But the capillaries soon dilate, thus facilitating the action of the heart. The warm carbonic acid bath has only a sedative effect. It acts as a regulator of cardiac action, while the cold carbonic acid bath acts rather as a stimulant.

We see then that temperature plays an important part in these baths. It is true that by a bath of ordinary cold water a similar effect could be produced, but a patient with cardiac disease would never be able to endure a bath sufficiently cold to attain the same result. In a bath of gaseous water the patient does not have the subjective sensation of cold. He feels entirely at his ease. The powerful curative effects of cold hydrotherapy can be gained at Bad-Nauheim without its disadvantages.

The baths at Bad-Nauheim have been compared to a cure by digitalis without the use of the drug. The result of the two is undoubtedly the same increase of action and better function of the cardiac muscles. By an examination of the pulse and tension of the blood before and after exercise I have been able to prove in a number of cases the same effect after the Bad-Nauheim, as after the digitalis treatment. I believe the different roads lead to the same end. Digitalis attacks the muscles of the heart directly; the Bad-Nauheim baths act indirectly by effecting a change in the capillaries and peripheral arteries and establishing a normal circulation.

As indicated by the empirical observations of the physicians of Bad-Nauheim it is not only cardiac diseases but affections of the arterial system as well, scleroses, etc., that afford magnificent results at Bad-Nauheim. It might be supposed that the high blood pressure in these diseases would contraindicate the employment of the baths; but just as after the use of digitalis the manometer is seen to descend in cases of lack of compensation with high pressure, so the same regulating effect, sometimes to an astonishing extent, is observed after the baths. It is necessary, however, to use precautions during the cure in order to avoid too strong reactions. This is why it is necessary to begin with warm baths and to ascend only slowly the therapeutic ladder.

Diseases of the heart, properly so called, are especially cases of muscular insufficium, the result of infections as influenza, typhus, diphtheria, etc.; or in correlation with chronic constitutional diseases like obesity, diabetes, nephritis, rheumatism, etc., for which the Nauheim "cure" affords the best results. Adjuvant methods, massage, mechanotherapy, diet, etc., are prescribed as may be indicated.

Huchard recognizes in valvular disease the following conditions: An ensystolic state, the heart as yet not being disturbed by the valvular affection; the hypersystolic state, the heart's action being increased, the muscle hypertrophied, and the valvular obstacle still surmounted; the hyposystolic state, in which decompensation begins with dyspnœa, œdema, irregularity of the pulse, etc.; the asystolic state of great decompensation.

Bad-Nauheim is not demanded in the ensystolic; nor yet in the asystolic state. The best results are attained in the hypersystolic and in the hyposystolic conditions.

As to the cardiac neuroses it is necessary to distinguish the secondary neurasthenia of the heart following other cardiac affections, which disappears with the primary affection, from the primary neurosis. The Bad-Nauheim treatment is contraindicated for the primary neurosis, and I have frequently found it necessary to discontinue the baths as too strong and exciting. But it is to be remembered that many muscular affections of the heart take at first the form of a cardiac neurasthenia, and that our diagnostic methods may lead to surprises. It often happens that therapeutic measures differ in their results from our anticipations, for it is not only the heart but the patient himself that undergoes the "cure." Moreover, the same cardiac affection may be treated in different patients with different results. By a too scrupulous hesitation we lose perhaps the best time to cure a patient.

2 ALICENSTRASSE.

AN EASY METHOD OF DETERMINING THE DOSE FOR INFANTS BELOW ONE YEAR.

By Herman Fried, M. D.,
New York.

Internal medication in the treatment of diseases of early infancy should be avoided as much as possible, unless there are positive indications for it. Physical and hygienic measures are more often of greater efficacy than drugs. Indeed, for the first ten to twelve weeks of life, the physician should desist from pharmacotherapy excepting in such conditions as congenital syphilis or convulsions. The tendency of the public always to demand from the doctor a prescription calling for drugs, should be offset by the proper education and enlightenment of the laity.

Often, however, it becomes absolutely necessary to use drugs even in the treatment of the newborn, and withholding them would be inhuman and unscientific. Can any one of us be so cruel as not to administer bromides or chloral in tetanus neonatorum, or is there any one among us so unlearned as to deny mercurial preparations in congenital syphilis?

The great difficulty, however, in the medication of children is not in the selection of the drug, but in the amount to be used. Dosage for children is at best a matter of guess work, and especially perplexing when we deal with infants below one year of age.

Several rules have been introduced for calculating the doses of drugs for children. Young's rule, to add 12 to the age and divide the age by the number thus obtained, is the most popular and useful. But, it has a great disadvantage in its application to infants below one year. A long process of calculation is necessary. According to the rule, to compute the dose for a baby, seven months old, it becomes a tedious process, thus:

$$\frac{\frac{7}{12}}{\frac{7}{12}+12} = \frac{\frac{7}{12}}{\frac{7+144}{12}} = \frac{7}{151} \text{ of adult dose.}$$

A very unpleasant arithmetical indulgence for a busy practitioner when hurrying from one bedside to another.

Cowling's rule, to divide the age at next birthday by 24, cannot be applied to infants below one year. Under this rule a baby one month old would receive the same dose as a baby eleven months.

Clark's rule, to divide the actual weight of a child by the average weight of an adult (150) has, besides many other objections, the disadvantage that we cannot always weigh our patients.

Brunton's rule, to multiply the number of grammes in full doses by the child's next birthday and by 4, will give the dose in centigrammes, is of little value in this country, because the metric system is not in use in America; furthermore, this rule, like Cowling's, cannot be applied to infants below one year.

Apparently we have no adaptable rule by which we can be guided in the dosage for children below one year. I have, therefore, formulated a rule, which facilitates, simplifies, and practically does away with calculation in arriving at the proper fraction of dosage.

The rule, of course, is not intended for children older than one year. Any one of the rules previously mentioned can be applied to them. Young's rule being preferable, as it is generally of sufficient exactness.

My formula is as follows: "Make the age in months numerator, and 150 denominator of the fraction." Thus, for a baby, two months old, $\frac{2}{50}$; three months, $\frac{3}{150}$; four months, $\frac{4}{150}$, etc. This does away with all computation. The resultant fraction being very near or the same as when arrived at by Young's rule. In order to demonstrate how close in results and how insignificant the differences in the fractions obtained either by Young's or my rule, I have prepared the following table:

	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.	6 mo.	7 mo.	8 mo.	9 mo.	10 mo.	11 mo.	12 mo.
Young's rule:...	$\frac{1}{145}$	$\frac{2}{146}$	$\frac{3}{147}$	$\frac{4}{148}$	$\frac{5}{149}$	$\frac{6}{150}$	$\frac{7}{151}$	$\frac{8}{152}$	$\frac{9}{153}$	$\frac{10}{154}$	$\frac{11}{155}$	$\frac{12}{156}$
My rule:........	$\frac{1}{150}$	$\frac{2}{150}$	$\frac{3}{150}$	$\frac{4}{150}$	$\frac{5}{150}$	$\frac{6}{150}$	$\frac{7}{150}$	$\frac{8}{150}$	$\frac{9}{150}$	$\frac{10}{150}$	$\frac{11}{150}$	$\frac{12}{150}$

Glancing at this table one cannot help noticing that the fractions obtained under my rule, always having the denominator 150, are easily reduced. On the other hand, those obtained under Young's rule are not easily reduced and are difficult in computation.

For those who for some reason or other would prefer to retain the classic rule of Young, I have somewhat modified or rather added to the rule, which will facilitate considerably the computation of doses for children below one year.

Young's rule as modified now reads as follows: For children below twelve years and above one year, add 12 to the age and divide the age by the number thus obtained.

For infants below one year, add 144 to the age in months and divide the age in months by the number thus obtained: Thus, for a baby, eight months old, $\frac{8}{8+144} = \frac{8}{152}$ of adult dose; for a baby one month old, $\frac{1}{8+144} = \frac{1}{145}$ of adult dose.

In this manner we arrive at the same fraction as under the original rule of Young, but we save ourselves the long process of calculation. This is practically Young's rule modified to suit the computation of doses for infants below one year.

These rules are, however, not intended to be ironclad or inflexible. For instance, it would not always be advisable to administer opiates in as large doses as these rules call for. Nor would it be sufficient to administer astringents, expectorants, or cathartics in as small quantities as these rules call for. Beside, very many factors should enter into the consideration of the dose, such as habits, idiosyncrasy, mental emotion, rate of excretion, etc. Professor H. A. Hare truly says: "The dose must vary to fit the case in the same manner that the cut of a coat must be varied to fit each individual." But just as the tailor in order to cut a coat must have a pattern as guide, so should the physician have a standard rule from which he should fit each individual dose to suit his case.

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LETTER FROM EDINBURGH.

The Sanitary Congress at Elgin.—The Caledonian Medical Association at Fort William.—British Hospitals Association Conference at Glasgow.—Professor Sims Woodhead and the Scottish Medical Schools.—A Proposed Jewish Dispensary in Glasgow.—Air Purification in Glasgow.—A Scottish County Councillor on Quack Remedies.

EDINBURGH, *October 4, 1910.*

The holiday months of August and September generally afford little in the way of news, and this year has been no exception. The usual announcement on the door of a closed house or office to the effect that patients will be treated by another doctor during the current month has been largely in evidence, and overworked medicos have sought, with rod, gun, or golf club, to obtain the much needed relaxation and change of air.

The 36th Annual Congress of the Incorporated Sanitary Association of Scotland was opened at Elgin on September 1st. The delegates were welcomed by Lord Provost Wilson, and the president of the association, Mr. Robert Lindsay, delivered the presidential address, his subject being The March of Sanitary Science. Dr. Matthew Hay, of Aberdeen, read a paper on Human Carriers of Typhoid and other Zymotic Diseases, and Dr. William Robertson, medical officer of health of Leith, contributed a paper on Practical Points in the Treatment of Tuberculosis, which was keenly discussed. The association holds periodical examinations in sanitary subjects, and its work is of great interest to the medical profession.

The Caledonian Medical Society held its annual meeting at Fort William on September 23rd. Dr. A. C. Miller, who was elected president for the ensuing year, read a paper on The Physician in Fiction, and Professor McKendrick contributed some Reminiscences of Lochaber. Other papers were submitted and the members dined together in the evening. The society consists of Scottish medical men interested in the literature and history of their country and the articles appearing in their quarterly publication, *The Caledonian Medical Journal*, are of true literary flavor. The society differs from most other medical societies in the absence of "shop" from its discussions and in its consistent adherence to Scottish traditions.

The first Conference of the British Hospitals Association was held in Glasgow on September 29th and 30th, the meetings being held in the university buildings. The president, Mr. H. Cosmo Bonsor, of Guy's Hospital, London, being absent, the chair was taken by Mr. J. W. Hedderwick, of Glasgow, a member of the Council. The papers read and the subjects discussed were all connected with hospital management, and some of these, such as the questions of state aid for hospitals and of abuse of hospital charity, elicited considerable discussion. The association is a reconstruction of the old Hospitals Association, founded in 1884. Its objects are "to facilitate the consideration and discussion of matters connected with hospital management, and when desirable, to take measures to further decisions arrived at, and to afford opportunities for the acquisition of a knowledge of hospital administration, both lay and medical."

Professor Sims Woodhead, in a note appended to the report of the Committee on the Scottish Universities, of which he is a member, calls attention to the condition of clinical teaching in Scottish medical schools. He points out that the reputation of the schools in Edinburgh and Glasgow is such as to attract an exceptionally large number of students, the result being a dearth of clinical material for instructional purposes during the latter part of the curriculum. Recent rearrangements at Glasgow have solved the difficulty there, but the trouble is still existent in Edinburgh. For a total of about 200 students entering the wards each year the available surgical beds are only 336. The professors of systematic and clinical surgery, he says, are greatly overworked, and he suggests that much might be done in the utilization of out patients as well as in patients for clinical instruction. Referring to the rivalry between the university teachers and those of the extramural school, which he commends as encouraging independence and competition, he adds that the success of any competitive element among these teachers can result only in the unequal distribution of students among the teachers, and, therefore, of the available clinical material among the students. He suggests that much more teaching responsibility be put on the assistant physicians and assistant surgeons, so that the clinical students may be divided into senior and junior classes. This he considers would lead to more utilization of out patient clinical material and to more practical ward teaching, by allowing a larger proportion of the class to examine each patient.

A conference of members of the Jewish community in Glasgow, convened by the Glasgow Jewish Hospital and Sick Visiting Association, was held on September 4th to consider a proposal for the establishment of a free Jewish dispensary and, if possible, the provision of a Jewish kitchen in connection with one of the infirmaries. Such dispensaries are at present to be found in Liverpool, Leeds, Birmingham, and Manchester, and it is felt that such another would be desirable in a large city like Glasgow. With regard to the proposal to establish a Jewish kitchen in one of the infirmaries, the promoters state that they have no complaint whatever against the treatment of Jewish patients at these institutions, the nurses and doctors having always acted with the greatest kindness, but many Jewish patients, brought up from childhood to the strict dietary laws of the Hebrew faith, have found the strange diet a hindrance to recovery.

The smoke trouble in Glasgow has become very acute, and the corporation have organized a Smoke Abatement Exhibition, which was opened by Lord Pentland, Secretary of State for Scotland, on September 16th, and closes this week. The exhibition is very comprehensive and complete, and is divided into three main sections. One division shows the use of gas appliances for lighting, cooking, and heating; another is devoted to electrical appliances; and the third shows the advantages of smokeless fuels and the use of ordinary and special stoves with such fuels. The Corporation Gas and Electrical Departments have each fitted up a model house, fully equipped with gas and electrical appliances respectively, and a number of manufacturing firms have assisted in giving to the exhibition a completeness hitherto unequalled in any display of its kind in the country.

At a recent meeting of the Dumbarton County Council, Mr. Alexander Wylie, of Cordale, an ex-Member of Parliament, made some strong remarks on the subject of quack medicines. According to a report in *The Scotsman*, Mr. Wylie said that these preparations were inflicting a great amount of injury to the health, life, and morals of the community. This trade flourished to a large extent by advertisements being allowed to disfigure their highways and byways, railway stations, etc., while in addition being interspersed copiously in the current literature, including, he was sorry to say, many religious publications. It had been found by the British Medical Association not only that exorbitant prices were charged, but that there were a great many deleterious materials in these remedies. In some cases the prices charged were 1,400 times as much as the cost of the ingredients, and this trade was largely increasing. When he was in Parliament he had intended to move in this matter, but was told that very probably the government would take steps. But they had not, and would not, unless and until considerable pressure was put on them. They were far behind other countries in this respect. There was complete prohibition in Denmark, Norway, and Sweden, and great restriction in Germany, Austria, and Italy, and in some of their own colonies, Canada especially. Under the Food and Drugs Acts they were compelled to prosecute poor, hard working farmers for having a small excess of water in their milk, sometimes through natural causes, while the wealthy, luxurious, and swindling patent medicine vendor, who was making his ill gotten thousands by deliberate fraudulent representations, was not touched.

Therapeutical Notes.

Diet in Biliary Lithiasis.—In the *British Medical Journal* for September 3, 1910, is an abstract of an article by E. Binet in the *Tribune médicale* (No. 10, 1910) on the value of fats in the diet of patients suffering from biliary lithiasis. Fats are often forbidden on the grounds that they overtax the liver cells; that they exercise no favorable action on the secretion of bile, and that they are generally badly tolerated by the patients. It seems, however, that, except in the case of jaundice and of very insufficient biliary secretion, the greater part of the fat ingested is absorbed by the chylous vessels, and does not traverse the liver. And, further, a distinction should be made between those cases in which the biliary secretion only is at fault, and in which it seems legitimate to permit of a certain quantity of fats in the diet, and those cases in which there is no doubt that the liver is overtaxed, the cellular function being manifestly insufficient; in these latter cases fats should be absolutely forbidden.

No agreement has been arrived at as to the effect of the ingestion of fats on the biliary secretion; some workers deny that it increases the secretion at all, while others, as, for instance, Rosenberg and Bruno, find that it has a real effect. The tolerance of fats varies in the individual case and according to the particular fat employed. That fat is most easily digested which has a low fusion point and easily forms an emulsion; these two properties are not always combined, and, for instance, vegetable fats are fusible at a low temperature, but with difficulty form emulsions. Fresh cream and butter which has no taint of being rancid are two of the most digestible forms of fat. The patient's inclinations and the objective examination of the gastric sensibility give most guidance as to the administration of fat. In many cases there are positive reasons for recommending fat as a part of the diet. Clinically the author has found that in apparently similar cases under similar treatment, except that in one set of cases fats are given and in the other withheld, improvement seems to set in earlier and be more rapid and better maintained in three quarters of the cases to which fats are given. A reason for this is that when they are well tolerated fats acts favorably upon the condition of hyperchlorhydria so often present and upon the pains due to pyloric spasm.

The laxative effect of fats is of value, but it is pointed out that olive oil in large quantities is not a certain laxative, and that it is often not so well tolerated as are butter and cream. There is danger in reducing the food of patients with gallstones, lest the quantity of bile secreted, which depends upon gastric evacuation, should be diminished, and the nutritive value of fat is of importance; patients who can tolerate fat are found to put on weight when it is added to the diet. The possibility of administering fats is, however, not one to be considered, except in the chronic stage, when every trace of local or general infection after an acute attack has disappeared. In suitable cases the author prescribes from 60 to 100 grammes (2.1 to 3.5 oz.) of butter, a third of which may be taken toward the end of each of the three meals, or the amount may be divided into two parts, one of which is taken with breakfast, the other some time after the evening meal. The latter method has the advantage of ensuring a better flow of bile during the night. The same applies to the cream, which is given in amounts of 200 to 300 grammes (7 to 10.5 oz.) in twenty-four hours.

Ointment for Application in Rhinitis Sicca.—Nose bleeding is sometimes caused by the detachment of scabs by the patient's finger nail. To prevent the scab formation E. W. Roughton (*Practitioner*, October, 1910) prescribes the use of a liquid ointment of mercuric nitrate, prepared as follows:

℞ Ointment of mercuric nitrate, ...gr. xl;
Oil of almond, ...ʒiv;
Liquid petrolatum, ...ʒiv.

M. et Sig.: Use with an oil atomizer or paint on with a camel's hair pencil.

Suppositories for Acute Prostatitis.—Quoting from the *Monatshefte für praktische Dermatologie*, the *Apotheker Zeitung* for August 31, 1910, publishes the following prescription for a suppository used in the treatment of acute prostatitis:

℞ Heroin hydrochloride, ...gr. 1/3;
Eumydrin, ...gr. 1/40 to gr. 1/20;
Oil of theobroma, ...ʒss.

M. ft. supposit. D. t. dosis No. VI.
Sig.: One suppository to be inserted night and morning.

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MUCOUS PATCHES AND THE SPREAD OF SYPHILIS.

The great contagiousness of the mucous patch has long been a matter of common knowledge, and the desirability of reducing its infecting power is thoroughly recognized in the interest of social prophylaxis. The lesion teems with spirochætæ, and any slight and superficial solution of continuity sets them free. Some important experiments have been made by Dr. E. Jeanselme and Dr. A. Touraine (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, August 4th) with regard to the comparative efficiency of certain applications—"caustics" they call them—in killing the spirochætæ. They first dried the surface with absorbent cotton and then scraped the patch, examining with the ultramicroscope both the débris scraped off and the reddish serosity subsequently exuding, as well with as without the application of a "caustic."

The substances applied were nitrate of silver (solid and in solution), tincture of iodine, oxygenated water, calomel ointment, and ordinary mercurial ointment. The silver salt and iodine seemed to be more efficient than the others, though little use was made of oxygenated water, on account of the painfulness of the application. The solid stick of silver nitrate was found much more effective than any solution, and this fact the authors attribute to the action of water in causing such a tumidity of the cells as to impede the penetration of the nitrate, although mere water itself possesses some efficacy in destroying the spirochætæ. The ointments mentioned were slow in their action and comparatively inefficient. But the triumph of any one of these applications is only temporary; in a few days, sometimes at the end of forty-eight hours, as many virulent organisms are to be found as at first. Therefore the lesion must be treated till it disappears.

THE CIRCULATORY SYSTEM AND NEPHRITIS IN CHILDHOOD.

The physiological part played by the kidneys explains the frequency of their action in the development of lesions of the heart and vascular system. The changes taking place in arterial tension and the size of the heart are most frequent in the nephritides of the adult. In the nephritides of childhood the action of the kidney on the heart and vascular system is still poorly understood, and consequently a recent paper by Nobecourt and Voisin, in the *Archives de médecine des enfants*, is of considerable importance. They have collected numerous cases of acute infantile nephritis during the progress of which the cardiovascular symptoms consisted principally in a dilatation of the heart, an increase in the arterial pressure, the presence of a bruit de galop, and increase in the size of the liver. These phenomena frequently coexist, but not always, with an increase of weight and œdema in various portions of the body. They are essentially transitory and often undergo their evolution undetected.

The mechanism of these various symptoms may be explained as follows: Under the influence of the renal lesion a retention of liquid occurs, with an increase in weight, œdema, and a rise in the arterial pressure; the work of the heart is increased and the organ becomes dilated; the liver in its turn becomes distended from the fact of the cardiac dilatation. When the renal permeability becomes reestablished and diuresis takes place, the œdema decreases, the blood pressure becomes lowered, and the heart returns to its former anatomical condition. The cardiac changes are the more marked the greater the acuteness of the renal lesions in the beginning, and its functions are considerably involved.

During a subacute or chronic nephritis the same accidents arise if an acute inflammatory attack or an intercurrent affection should arise. After a time the dilatation may become permanent and be accompanied by a certain degree of cardiac hypertrophy. The changes arising in the cardiovascular apparatus during acute nephritis, so evident and common in childhood, do not appear to take place in the adult to the same extent or with the same frequency. This difference in the reaction of the heart in the child and in the adult perhaps may be accounted for by the greater elasticity of the muscle in young subjects. The myocardium in childhood easily becomes distended, as cardiac pseudohypertrophy demonstrates. The cardiac disturbances may be so marked during the nephritides as to be the cause of diagnostic difficulty in some cases.

On the other hand, the study of arterial pressure and the size of the heart during a nephritis may lead to certain prognostic indications. A marked increase in the pressure and a manifest enlargement of the heart at the outset of acute nephritis do not necessarily indicate an unfavorable prognosis, because these nephritides may be easily controlled by treatment. On the contrary, an acute nephritis which develops without any marked action on the heart or the vascular system may often be extremely obstinate to treatment. On the other hand, a rapid decrease in the blood pressure and cardiac dulness may lead one to expect that the evolution will be rapid and favorable. Following an acute nephritis or during the progress of a prolonged nephritis, when the blood pressure increases and the heart dilates, an acute attack or an intercurrent affection is to be feared. In the curable type, when once the albumin has disappeared, one should closely watch the heart and the blood pressure. The treatment is that of nephritis in general, but the amount of liquids taken should be limited. Later on, a milk diet may be ordered. If necessary purgatives and bloodletting are to be resorted to. Digitalis and theobromine may be administered with caution, but only when the diet results in no improvement, and under these circumstances their usefulness is often slight.

INTESTINAL DYSPEPSIA.

Numerous are the causes of intestinal dyspepsia. In a recent paper on the subject, which appeared in the *Lyon médical* for July 3, Cade has pointed out the principal elements in the diagnosis of the localization of the process. Gastrogenous dyspepsia, he says, can be recognized by the former or recent symptoms of the gastropathy, by the rapid improvement from treatment directed to the stomach, and by the presence of connective tissue in the fæces after Schmidt's test meal. Hepatogenous dyspepsia is diagnosticated by the absence or the presence of bile in excess in the intestine and also by the percentage of fat in the stools. This type of dyspepsia is frequently combined with pancreatic dyspepsia, and the fæces will be found very decidedly changed. Pancreatogenous dyspepsia is characterized by a marked stearrhœa and hyposteatolysis. The fats in the fæces are found in the form of neutral fats, but in practice all that need be ascertained is that there exists a considerable increase in the fats, which may be made evident if necessary by microscopical examination. Insufficient digestion of the albuminoids is distinguished by a very large amount of unaltered muscular fibres and particularly by microscopic débris of meat. One should note the unaltered nuclei of the muscular fibres, as their destruction is due to the pancreatic juice.

The more marked changes in the fæces due to an insufficient amount of pancreatic juice are met with only when a considerable or total destruction of the gland has taken place, as in cancer of the pancreas or chronic pancreatitis. According to Gaultier, duodenal dyspepsia is a combination of the two preceding types, in other words an hepatic pancreatic dyspepsia, and may consequently be recognized by the same means. As to colonic dyspepsia, the case history and consequently its diagnosis may be confounded with those of mucomembranous colitis. Of late, given an intestinal dyspepsia, one has endeavored to distinguish whether the digestive disturbance was related to the albuminoids or to the carbohydrates, the former class being generally a more serious affection than the latter.

In order to establish this distinction by the fermentation test of the stools, Schmidt has been able to demonstrate a form of dyspepsia due to a bad elaboration of the carbohydrates with secondary fermentation, to which he has given the name of fermentation dyspepsia. This affection has no distinct clinical individuality; indefinite pain in the region of the umbilicus, a mild diarrhœa alternating with constipation, abdominal distention, and a coated tongue are the features. Examination of the fæces is necessary in order to detect it, and the latter will be found pasty with an acid reaction, a butyric odor, and containing undigested carbohydrates, which can be made evident by a microscopical examination and the fermentation test. The favorable results obtained by eliminating all carbohydrates from the diet confirm the diagnosis.

Fermentation dyspepsia is the result of an amylaceous diet which has been too strictly followed in the treatment of enteritis, and since Schmidt's work it has been made evident that a milk diet must not be too rigidly followed in the various enteropathies. It should be resorted to only in cases of albuminous fermentation, and, under these conditions, the proteids are to be decreased in amount and vegetable albumins alone given. Lactic ferments may be administered with prudence in the form of powder or tablets, but more particularly in the liquid state. Beer or grape yeast may sometimes give favorable results.

In fermentation dyspepsia the carbohydrates must be given in small quantity by placing the patient on a diet of meat and fats. In gastrogenous dyspepsia due to a hypochlorhydria hydrochloric acid, lactic acid, coagulated milk, and natural gastric juice are to be resorted to. In pancreatic insufficiency acid medication has its indication also, and so has the administration of the ferments. The salts of calcium, which excite the pancreatic secretion, have also their indication. In biliary insufficiency the salts of sodium and magnesium are of use, but bile or the extract of bile is particularly indicated. Intestinal dyspepsia is also favorably controlled by a course at certain springs. For example, when there are diarrhœa and pain, Plombières has its indications, while in the atonic types with constipation and hepatic congestion a course at Châtel-Guyon will be of benefit.

ABSCESS IN GONORRHŒAL EPIDIDYMITIS.

Certain types of suppurating gonorrhœal epididymitis have been described, the pus making its exit outwardly, but cases of this kind are the exception. The question, however, arises as to whether or not in certain instances of epididymitis pus may form, but, instead of being discharged externally, become slowly absorbed. Escat, Bazy, and Hagner have found the presence of pus in cases of gonorrhœal epididymitis, and Baermann has pointed out the necessity of exploratory puncture in order to make a diagnosis of these pus collections. Charrier, of Bordeaux, in the *Province médicale*, January 1, 1910, related the results of his examination in twenty patients, in ten of whom he found suppuration of the epididymis.

One should not await the occurrence of fluctuation, because the epididymis will be found in the early stages somewhat enlarged and spreading out over the posterior aspect of the testicle, extending beyond the lower pole and sides of the latter. This large tumor is felt as a hard, resisting body, nodular in certain spots and extremely painful. The puncture should be made at the most painful spot, an ordinary hypodermic syringe being used. The pus does not usually make its appearance at once on aspiration, and this must be attempted several times before a few drops appear in the barrel of the syringe. The pus is characteristic, usually being yellow and thick, with the admixture of a small amount of blood. Although painful, puncture is not only useful as a diagnostic method, but is frequently followed by an amelioration or even cure.

The results as observed by Charrier are as follows: There is a rapid decrease in pain within the first twenty-four hours, and on the next day palpation can be carried out without discomfort to the patient. The swelling will be found to have diminished so much that within a week or ten days the patient is practically cured and can be up and about. There is a point to which Baermann has called particular attention, the rapid return of the temperature to normal. Puncture of pus collection in the epididymis is consequently decidedly indicated in the treatment of gonorrhœal epididymitis, its only drawback being the pain. The open method, as practised by Bazy, Hagner, and others, has its indications and is of great value, but should be resorted to only by those skilled in surgical technique.

THE HOSPITAL OF THE ROCKEFELLER INSTITUTE.

This new hospital, a short account of which will be found elsewhere in this issue, seems to be unique in its scope. The managing officer tersely informs us that it was "not built to add seventy beds to the facilities in New York for caring for the sick or injured," but to extend the field of the research work of the institute. Certain diseases having at any given time been made the subject of special investigation, only persons affected with those diseases will be admitted during a specified period. It is easy to see that the study of special parts of pathology and therapeutics will thus be concentrated and rendered free from the distraction that must necessarily occur in the work of carrying on a general hospital. The advantage of such a state of things is obvious, and we may confidently expect that the new hospital will prove of great value in the particular field of the institute's work.

NEURASTHENIA.

In this number of the *Journal* we publish a learned article on this subject, by Dr. George M. Parker. While calling our readers' particular attention to Dr. Parker's article, we may be permitted to make a few remarks concerning the late Dr. George M. Beard's connection with the subject of neurasthenia. It is very commonly supposed that Dr. Beard coined the word, but such was not the case, though he played a prominent part in assigning to it a definite meaning. The confusion which at one time reigned as to its signification is apparent from the definitions given of it by Ludwig August Kraus in his *Kritisch-etymologisches medicinisches Lexikon* (third edition, Göttingen, 1844), which may be freely translated as follows: "1. The so called weakness of nerves, or excessive activity of the nerves! 2. Of the newer (so called natural philosophical) pathologists: actual nervous weakness, or defective activity of the nerves."

Obituary.

DE FOREST WILLARD, M. D., Ph. D., of Philadelphia.

Dr. Willard died on Friday, October 14th, after a short illness, in his sixty-fifth year. He was a native of Connecticut and a graduate of the Medical Department of the University of Pennsylvania, of the class of 1867. He was both a general surgeon of extensive experience and an orthopædist of national reputation. He served as professor of orthopædic surgery in the University of Pennsylvania until within a few weeks of his death. He was a member of many medical organizations, and in several of them he had held high offices. He was a frequent contributor to periodical medical literature. He was eminently a philanthropist.

The Rockefeller Institute for Medical Research.

The Rockefeller Institute for Medical Research is beautifully situated on the cliffs overlooking the East River, opposite Blackwell's Island, near the new bridge to Long Island City. The institution occupies two city squares, between Sixty-fifth and Sixty-sixth Streets, East River, and Avenue A, and consists of four buildings, the research laboratory, founded in 1901, the power house, the research hospital, and the isolation building. While in the laboratory, which has been open for a number of years, considerable work has been done under Dr. Simon Flexner, the hospital and isolation building were opened on Monday, October 17th. It is the first hospital designed for the specific purpose of medical research. Its location makes it possible that the buildings are lighted from all sides, for even the third basement, overlooking the river in the rear, is at least twenty-five feet above the street level. The hospital building consists of eleven floors, four of which are provided for patients. Each ward opens directly on to an open loggia or roof, so that all the beds in the ward may be wheeled out at once, and the patients kept out of doors all the year round should it prove desirable. Perhaps the best characterization of the individuality of the building is to say that a very large proportion of the area devoted to patients is out of doors.

On the entrance floor of the hospital building are placed the offices of the director, chief of the medical staff, head nurse, superintendent, etc., besides (in the river end) quarters for the medical staff.

The second floor is devoted to the nurses, head nurses, and superintendent, each being provided with a sitting room, bedroom, and bath; night nurses having their sleeping rooms cut off by isolating corridors and double doors. This floor has an ample dining room and a sitting room. This story constitutes in fact an apartment for nurses, and, as all stairs are cut off by fireproof screens and doors, the nurses are enabled to lead their own lives as independently as if they were in a separate building.

The third floor is devoted to single rooms, rooms with baths, workrooms for nurses, and a small room for laboratory work to be done in intimate connection with cases treated here. On the river end of this floor projects the sitting room like the pilot house of a steamer, while opening from this is a large roof (corresponding with the other on the west) for the use of these patients. On a level with this floor, a bridge leads to the roof of the isolation building, making it also available to these patients or to the nurses, one flight below.

It was, however, the plan of the fourth, fifth, and sixth floors which determined the scheme for the whole building. At each end of this plan, running north and south (at right angles to the long axis of the building), are the wards, each eighteen feet wide by forty-eight feet long. Large as is this area, they are intended to contain but seven beds each and the open loggia or roof at each end of the building is big enough to receive all these beds at once when they are wheeled out from the ward. Opening directly from the wards there are also the nurses' workrooms, bath rooms and toilets, a "ward room," a doctor's laboratory, and the inclosed fire escape stairs leading from the ground to the roof. On each of these three ward floors, on the private patients' floor, and on that devoted to the nurses is a diet pantry provided with dressers, cooking apparatus, etc., while all these are connected with each other, with the roof above, with the diet kitchen on the fifth floor, and with the general kitchen of the hospital below. The only difference in the plan of these ward floors lies in the fact that on the fourth floor the large centre room on the south is occupied by a complete plant for the practice of hydrotherapy; on the fifth floor this space is given up to the general diet kitchen, and on the sixth to a constant temperature room for experiments in metabolism.

The seventh floor is entirely occupied by laboratories, biological and physiological.

The eighth floor provides a small operating suite (this is in no sense an operating hospital), a photographic room with its dark room, and an outdoor room for the ventilation of mattresses which are hung on overhead trolleys here, receiving sunshine and air until they are needed again instead of being piled in some basement closet space.

In the west basement, easily accessible from the driveway which slopes down from the main entrance to the grounds, are the rooms devoted to dispensary work and the ambulance entrance for patients unable to use the few steps leading to the first story doorway. This basement patients' entrance opens into a large reception hall or waiting room opposite which is an examination room with its bath and a large locker room for patients' outside clothing. The elevator close at hand leads to the wards above. Continuing toward the river this driveway leads to the tradesmen's entrance, flanked by the usual office and receiving room. The rest of the floor is occupied by the kitchen with its stores, pantries, butcher shop, vegetable room, etc., while the various servants dining rooms are given the southeast corner of the plan. The basement is given up to an enormous laundry exceptionally well lighted for such a room in a crowded city, and unusually well equipped, too, having large sewing and mending rooms, and general storerooms for linen. This floor contains also the water tanks for the building and air tanks which control its delivery under high pressure to the laboratories 100 feet above. It also contains hot water tanks, the battery of pumps, and, in fact, all the machinery of such a plant which is better placed here than in the power house on the upper end of the property two blocks further north.

Below the subbasement along the river front which their windows overlook, are the ten rooms for maid servants with their baths, controlled by the housekeeper's apartment at the foot of the single stair which leads to these quarters.

The isolation building is between the hospital and the laboratory. It is but two stories in height above the entrance grade but has beneath it a basement entered from the service court, and below this (as in the hospital) a subbasement. As one enters the long corridor which extends through to a balcony on the river, cutting the whole floor in two, the first room on the left is a preparation room for patients with bath, etc., while the room next it provides facilities for visiting physicians to bathe and change. The rooms beyond are for nurses' work and a diet-pantry (connecting by dumbwaiters with the service room on the kitchen floor below). The whole side of the building on the right (south) of the entrance is given up to the series of patients' rooms, cut off from the back only by glazed doors and partitions and separated from each other by glass alone. These rooms form, so far as the control of a single night nurse is concerned, one ward, yet they are absolutely separated and may each contain a patient with a different infectious or contagious disease.

The glass partitions serve another purpose beside admitting of a safe inspection and a general control, they prevent patients during an extended confinement from becoming lonesome and ennuied. In the floor above provision is made for the nurses and servants of this building, with their dining room, etc., while the stairs are carried on to the roof, which can be used by these nurses. The basement contains orderlies' rooms, doctors' laboratory, etc., and a very complete sterilizing plant so arranged that its entrance room for the soiled things from above has no connection with its "clean room" except through the sterilizers themselves. From the latter such things as must be starched or ironed go to the laundry in the main hospital.

The power house on the north corner of the property provides light and power, heat and cold for the hospitals as well as for the old laboratory building.

News Items.

A Correction.—In a recent article on the Centenary of the Berlin University we mentioned Alexander von Humboldt as one of the founders. This was by an oversight on our part. We intended to write Wilhelm von Humboldt, by two years the elder brother of Alexander, in 1810 secretary of education of Prussia.

The Treatment of Malignant Tumors by Radium is the subject of a paper to be read by Dr. Louis Wickham, of Paris, at a stated meeting of the New York Academy of Medicine, to be held on Thursday evening, November 3d. There will be a general discussion.

The Hippocrates Medical Society, of Washington, D. C., elected the following officers at a meeting held on Friday evening, October 14th: President, Dr. Charles S. White; vice-president, Dr. Thomas S. D. Grasty; secretary and treasurer, Dr. Lawrence M. Hynson.

The Harvey Lectures.—On Saturday evening, November 5th, the second lecture in the sixth course of Harvey Society lectures will be delivered at the New York Academy of Medicine by Professor W. E. Castle, of Harvard University, on Unit Characters in Heredity.

Ehrlich's 606 at the West Side German Dispensary.—Dr. Abraham L. Wolbarst announces that, in view of the widespread interest in Ehrlich's 606, he is willing to extend the courtesy of the supply of this remedy which was given to him by Professor Ehrlich to any deserving patient in whose case it might be of special value. A clinical study of 606 is being conducted at the West Side German Dispensary, 328 West Forty-second Street, and the People's Hospital, 203 Second Avenue.

Anniversary Meeting of the New York Academy of Medicine.—On Thursday, November 17th, at 8:30 p. m., the anniversary meeting of the New York Academy of Medicine will be held in Hosack Hall. The topic selected for consideration is Animal Experimentation in Medicine. Dr. William H. Welch, professor of pathology in Johns Hopkins University, will read a paper entitled Objections to Proposals of Further Legislation to Regulate Animal Experimentation. Dr. W. B. Cannon, professor of physiology in the Harvard Medical School, will read a paper entitled The Character of Antivivisection Literature.

The Wesley M. Carpenter Lecture was delivered at the New York Academy of Medicine on Thursday evening, October 20th, by Major F. F. Russell, of the Medical Corps of the United States Army. His subject was The Control of Typhoid Fever in the Army by Means of Vaccination. An interesting discussion followed.

Dr. Mayo Entertained by Brooklyn Doctors.—Dr. William J. Mayo, of Rochester, Minn., read a paper before the Medical Society of the County of Kings, on Tuesday evening, October 18th, and was tendered a reception and banquet at the Pouch Gallery on the following evening, under the auspices of the society. Dr. John C. MacEvitt, president of the society, presided.

Lectures on Skin Diseases.—Announcement is made by the governors of the New York Skin and Cancer Hospital that Dr. L. Duncan Bulkley will give the twelfth series of clinical lectures on diseases of the skin in the out patient hall of the hospital on Wednesday afternoons, from November 2d to December 21st, at 4:15 o'clock. The course will be free to the medical profession.

Street Sanitation.—At a meeting of the Section in Public Health of the New York Academy of Medicine, to be held on Friday evening, October 28th, Dr. William Van V. Hayes will deliver an address on Street Sanitation and Some Methods for its Improvement, which will be illustrated with lantern slides. The subject will be further discussed by Dr. Harlow Brooks, George A. Soper, Ph. D., and H. de B. Parsons.

Cornell University Medical College.—The Cornell University Medical College opened on September 28th with a total enrollment of 127 students, distributed as follows: First year, 28; second year, 20; third year, 11; fourth year, 56; special students, 12. The decline in numbers from the fourth to the third year marks the falling off when the A. B. degree with the full year's work in physics, chemistry, and biology was required for admission.

Additional Endowment for the Rockefeller Institute.—At the formal opening of the new hospital attached to the institute, held on Monday afternoon, October 17th, announcement was made that Mr. John D. Rockefeller had given securities valued at $3,820,000 to be added to the endowment fund of the Rockefeller Institute for Medical Research. This makes the total endowment of the institute in properties and money $8,240,000, with an actual income bearing endowment of $6,420,000.

A Campaign against Diphtheria in Virginia was inaugurated on October 13th, when the State Commissioner of Health sent 652,000 units of diphtheria antitoxine to local health officers all over the State, in an effort to eradicate diphtheria from the State. The supply of antitoxine will be supplemented at cost price if more is required.

The Medical Society of the State of New York.—The next meeting of the First District Branch of this society will be held in Newburgh, Orange County, on Thursday, October 27th, at 2 o'clock. For information regarding the meeting write to Dr. Charles E. Denison, 143 West Seventy-sixth Street, New York, who is the secretary of the society.

The Philadelphia County Medical Society.—At a meeting of this society, held in the College of Physicians recently, the programme consisted of a symposium on food in health and disease. Among those who took part in the discussion of the subject were Dr. James Tyson, Dr. W. E. Robertson, Dr. M. Howard Fussell, Dr. Herman B. Allyn, Dr. Richard C. Norris, and Dr. M. B. Hartzell.

A Legacy to the Hartford, Conn., Medical Society, amounting to 100,000, is included in the will of Mrs. Mary Bacon, widow of Dr. William T. Bacon. The Hartford Hospital will receive $5,000 to endow a bed for persons suffering from diseases of the eye and ear. Yale University and Hartford Hospital are residuary legatees. The bequest to the Hartford Medical Society will probably be devoted to original research work.

A Dinner to the Blackwell Medical Society, of Rochester, N. Y.—The members of this society were entertained at dinner by Dr. Jennie P. Turner, of Newark, N. Y., on Thursday, October 13th. During the afternoon a visit was paid to the Newark Custodial Asylum for Feeble Minded Women. Dr. Nevin, superintendent of the asylum, delivered an address on The Cause, Classification, and the Management of the Feeble Minded.

The Medical Society of the County of New York.—A stated meeting of this society will be held in Hosack Hall, New York Academy of Medicine, on Monday evening, October 24th. Dr. Simon Flexner will read a paper entitled The Relation of Experimental to Human Poliomyelitis, which will be discussed by Dr. L. Emmett Holt, Dr. Bernard Sachs, Dr. Isaac Strauss, Dr. Virgil P. Gibney, and Dr. Le Grand Kerr. Dr. R. C. Coburn will read a paper on Nitrous Oxide-Oxygen Anæsthesia.

The New York Medico-Surgical Society.—The annual meeting and quarterly dinner of this society were held at the Hotel Manhattan on Saturday evening, October 15th. The paper of the evening was read by Dr. J. J. MacPhee, the subject being the Practical Treatment of Nervous People. The following officers were elected: President, Dr. J. A. Irwin; vice-president, Dr. D. S. Dougherty; secretary, Dr. Samuel McCullagh; treasurer, Dr. J. Arthur Booth; member of executive committee, Dr. John A. Bodine.

Gifts and Bequests to Charity.—Through the will of Mrs. Louise Dinan, who died recently in Philadelphia, Rush Hospital for Consumptives will receive $1,000.

The will of Mrs. Mary Stinson Bean contains a bequest of $10,000 to build in or near Norristown, Pa., a hospital for children suffering from contagious diseases.

Mrs. C. B. Houston, of Chester, Pa., has announced her intention of erecting and presenting to Chester Hospital a children's ward, as a memorial to her husband.

Veteran Physicians the Guests of the Philadelphia Medical Club.—On Friday evening, October 21st, a reception was held in the Bellevue-Stratford Hotel, Philadelphia, by the Medical Club, to which every physician in the State of Pennsylvania who was graduated fifty or more years ago received an invitation. There are about one hundred and thirty of these semicentenarians in the State, and nearly one hundred were present at the reception. In addition to the invited guests, about 1,000 members of the club attended.

Civil Service Examinations.—Among the positions for which examinations will be held on November 26th by the New York State Civil Service Commission are the following: Assistant in experimental psychology, Psychiatric Institute, State Commission in Lunacy, $1,500, men only; assistant physician, Raybrook Tuberculosis Sanatorium, $1,000 to $1,200, men only; chief examiner, board of alienists, State Commission in Lunacy, $5,000, men only; superintendent, Monroe County Tuberculosis Sanatorium, $3,000, open to men only for at least three months' residents of Monroe County.

A Dinner to the Medical Faculty of Temple University, Philadelphia.—Dr. Wilmer Krusen gave a dinner to the medical faculty of Temple University on Friday evening, October 14th. Dr. Guthrie McConnell, recently elected professor of pathology in that institution, was the guest of honor. Among those present were Dr. Elmer E. Brown, vice-president of the university, Dr. John C. Applegate, Dr. James C. Attix, Dr. W. Wayne Babcock, Dr. Wendell Reber, Dr. Frank C. Hammond, Dr. James H. MacKee, Dr. Jay F. Schamberg, Dr. C. E. de M. Sajous, and Dr John B. Roxby.

The New Mexico Medical Association.—At the annual meeting of this organization, held recently in Albuquerque, the following officers were elected: President, Dr. Francis T. Fest, of Las Vegas; first vice-president, Dr. R. L. Bradley, of Roswell; second vice-president, Dr. Leroy S. Peters, of Silver City; secretary, Dr. George S. McLandress, of Albuquerque, who was also elected editor of the journal of the association. Dr. James H. Wroth, of Albuquerque, was chosen as member of the council, succeeding Dr. George A. Harrison. Dr. Tipton, of Las Vegas, and Dr. Joyner, of Roswell, are the members of the council whose terms have not expired.

The West Virginia State Medical Society.—The forty-third annual meeting of this society was held in Parkersburg on October 5th, 6th, and 7th. The following officers were elected for the ensuing year: President, Dr. C. A. Wingerter, of Wheeling; first vice-president, Dr. J. E. Cannady, of Charleston; second vice-president, Dr. Glenn Mooman, of Petersburg; secretary, Dr. A. P. Butt, of Davis; treasurer, Dr. H. G. Nicholson, of Charleston; councilors, Dr. H. P. Linsz, of Wheeling, first district; Dr. W. H. Yeakley, of Keyser, second district; Dr. P. A. Healey, of Charleston, third district; Dr. W. S. Link, of Parkersburg, fourth district; Dr. S. R. Holroyd, of Athens, fifth district. The next annual meeting of the society will be held in White Sulphur Springs.

The Eastern Medical Society of the City of New York held a stated meeting at the Café Boulevard on Friday evening, October 14th. Dr. Charles J. Imperatori read a paper on Bismuth Paste in Mastoid Surgery. Dr. M. S. Kakels made a few remarks on the Ehrlich-Hata preparation in the treatment of syphilis and exhibited a patient. Dr. Willy Meyer read a paper on Thoracic Surgery. An executive session was held prior to the scientific session, at which important routine business was transacted. The present officers of this society are: President, Dr. A. J. Rongy; first vice-president, Dr. A. Hymanson; second vice-president, Dr. M. M. Stark; recording secretary, Dr. M. O. Magid; corresponding secretary, Dr. Harry E. Isaacs; treasurer, Dr. Joseph Bieber.

Epileptic Colonies.—Dr. William P. Spratling, of Baltimore, recently addressed the Tuscaloosa County, Ala., Medical Society relative to the public care of epileptics, referring particularly to the colony plan. Alabama has taken the matter up, and present indications point to the creation of a colony in that State in the near future. A committee in Connecticut has secured an appropriation with which to establish a colony, and the work of construction will be started soon. Dr. Max Mailhouse, of New Haven, is president of the new board of managers. Adding Alabama and Connecticut to the colony States, the number of States making provision for their dependent epileptics will be increased to nine. It is estimated that there are not less than 170,000 epileptics in the United States, less than 5,000 of whom are under adequate State care.

Personal.—Dr. I. S. Hirsch, of New York, has been appointed Röntgenologist to Bellevue Hospital.

Dr. William J. Ritter has resigned from the chair of clinical chemistry in the department of pharmaceutical chemistry of the Medico-Chirurgical College, Philadelphia. Dr. Ritter has been professor of clinical chemistry in this department ever since the course was first opened.

Dr. Frederick A. Kraft has been appointed health commissioner of Milwaukee, to succeed Dr. W. C. Rucker, resigned.

Dr. John B. Elliott, Jr., has been appointed to the chair of medicine in Tulane University, made vacant by the resignation of Dr. George B. Dock, who has gone to St. Louis to fill the chair of medicine in the Washington University Medical College.

Major Harry M. Hallock, Medical Corps, United States Army, retired, has been employed as medical director of the Arkansas Hot Springs Reservation at a salary of $3,600.

The Eighth District Branch of the Medical Society of the State of New York held its annual meeting in Buffalo on Thursday and Friday, September 29th and 30th. The following officers were elected for the ensuing year: President, Dr. Thomas H. McKee, of Buffalo; first vice-president, Dr. Henry A. Eastman, of Jamestown; second vice-president, Dr. Arthur G. Bennett, of Buffalo; secretary, Dr. Carl Tompkins, of Buffalo; treasurer, Dr. C. A Wall, of Buffalo.

The Third District Branch of the Medical Society of the State of New York met in annual session in Albany on Tuesday and Wednesday, October 4th and 5th. The following officers were elected to serve for the ensuing year: President, Dr. Mark O'Meara, of Kingston; vice-president, Dr. J. B. Harvie, of Troy; secretary, Dr. Henry L. K. Shaw, of Albany; treasurer, Dr. Whitbeck, of Kingston.

The Medical Society of the County of Dutchess, N. Y., held its annual meeting in Poughkeepsie on Wednesday, October 12th, and elected the following officers for the ensuing year: President, Dr. C. W. Pilgrim, of Poughkeepsie; vice-president, Dr. J. G. Otis, of Poughkeepsie; treasurer, Dr. L. C. Wood, of Poughkeepsie, reelected; secretary, Dr. F. J. Mann, of Poughkeepsie, reelected.

The Medical Society of the County of Livingston, N. Y., met in annual session in Geneseo on October 5th, and elected the following officers to serve for the ensuing year: President, Dr. W. K. McGowan; vice-president, Dr. F. A. Strasenburgh; secretary, Dr. A. P. Reed; treasurer, Dr. E. C. Perry; censors, Dr. J. P. Bown, Dr. F. A. Wicker, Dr. F. J. Bowen, Dr. W. E. Lauderdale, and Dr. F. R. Driesbach.

The Glens Falls, N. Y., Medical and Surgical Society has been reorganized and its name has been changed to the Hudson Valley Practitioners' Society. Its membership includes physicians from Glens Falls, Hudson Falls, South Glens Falls, and Fort Edward. The officers are: President, Dr. F. G. Fielding, of Glens Falls; vice-president, Dr. S. J. Banker, of Fort Edward; secretary and treasurer, Dr. B. J. Singleton, of Glens Falls.

The Minnesota State Medical Society met in annual session in Minneapolis on Thursday and Friday, October 6th and 7th, under the presidency of Dr. W. A. Jones. The following officers were elected: President, Dr. J. W. Robertson, of Litchfield; first vice-president, Dr. F. W. Dimmitt, of Red Wing; second vice-president, Dr. C. L. Scofield, of Benson; secretary, Dr. Thomas McDavitt, of St. Paul, reelected; treasurer, Dr. R. J. Hill, of Minneapolis, reelected. The next meeting of the society will be held in St. Paul on the first Thursday and Friday in October, 1911.

The Utah Medical Association elected the following officers at its annual meeting held recently in Salt Lake City: Dr. Fred W. Taylor, of Provo, president; Dr. R. A. Pearse, of Brigham City, first vice-president; Dr. W. R. Tyndale, of Salt Lake City, second vice-president; Dr. Heber C. Robinson, of American Fork, third vice-president; Dr. W. Brown Ewing, of Salt Lake City, secretary; Dr. J. N. Harrison, of Salt Lake City, treasurer. President Taylor will later appoint the new committees on scientific work, public policy and legislation, medical education and necrology.

Society Meetings for the Coming Week:

Monday, *October 24th.*—Medical Society of the County of New York.

Tuesday, *October 25th.*—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); New York Medical Union.

Wednesday, *October 26th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

Thursday, *October 27th.*—New York Academy of Medicine (Section in Obstetrics and Gynæcology); Brooklyn Pathological Society; Hospital Graduates' Club, New York; New York Celtic Medical Society; East Side Physicians' Association, of New York; Brooklyn Society for Neurology.

Friday, *October 28th.*—New York Society of German Physicians; New York Clinical Society; Academy of Pathological Science, New York.

The Delaware State Medical Society held its one hundred and twenty-first annual meeting in Wilmington on October 11th, and elected the following officers: Dr. L. S. Conwell, president; Dr. William Wertenbaker, vice-president; Dr. James H. Wilson, counsellor for three years; Dr. G. W. K. Forrest, secretary; Dr. S. C. Rumford, treasurer; Dr. James H. Wilson, delegate; Dr. Willard Springer, alternate to the American Medical Association, which will meet in Los Angeles next year.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending October 15, 1910:

	October 8th.		October 15th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	511	155	492	153
Diphtheria and croup	202	20	222	10
Measles	53	3	67	2
Scarlet fever	77	4	88	1
Smallpox	..	..	..	..
Varicella	35	..	17	..
Typhoid fever	143	17	149	20
Whooping cough	33	5	19	5
Cerebrospinal meningitis	4	7	3	5
Total	1,058	211	1,057	196

Cholera in Italy.—Surgeon Geddings, of the United States Public Health and Marine Hospital, who is stationed at Naples, submitted on October 10th the following report of the status of the cholera outbreak in Italy: Naples, October 2d to 4th, 34 cases, 11 deaths; other parts of Italy, 29 cases, 5 deaths. October 5th and 6th, Naples, 13 cases, other parts of Italy, 18 cases, 5 deaths. During the week ending September 24th, in the Province of Bari, there were 34 cases and 10 deaths, and in the Province of Foggia, 21 cases, and 15 deaths. According to press despatches, dated October 18th, 24 new cases of cholera were reported throughout the provinces during the preceding twenty-four hours, one in Avelline, one in Salerno, two in Bari, six in Caserta, and 14 in the province of Naples. Eight deaths occurred during the same period. Four new cases were reported in the city of Naples on October 18th, with two deaths.

The Health of Philadelphia.—During the week ending September 10, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 77 cases, 10 deaths; scarlet fever, 17 cases, 2 deaths; chickenpox, 3 cases, 0 deaths; diphtheria, 44 cases, 2 deaths; measles, 21 cases, 5 deaths; whooping cough, 16 cases, 15 deaths; pulmonary tuberculosis, 92 cases, 45 deaths; pneumonia, 14 cases, 20 deaths; cerebrospinal meningitis, 3 cases, 1 death; erysipelas, 1 case, 2 deaths; mumps, 3 cases, 0 deaths; infantile paralysis, 11 cases, 0 deaths. There were 5 deaths from tuberculosis other than that of the lungs, 1 from dysentery, 2 from malarial fever, and 48 from diarrhœal diseases under two years of age. There were 42 stillbirths; 30 males and 12 females. The deaths from all causes numbered 439, in an estimated population of 1,598,400, corresponding to an annual death rate of 14.28 in a thousand of population.

The Health of Chicago.—During the week ending October 8, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 107 cases, 10 deaths; measles, 19 cases, 1 death; whooping cough, 5 cases, 1 death; scarlet fever, 58 cases, 3 deaths; diphtheria, 159 cases, 20 deaths; chickenpox, 32 cases, 0 deaths; tuberculosis, 100 cases, 59 deaths; pneumonia, 10 cases, 56 deaths; cerebrospinal fever, 2 cases, 0 deaths. There was 1 case of smallpox, 1 case of German measles, and 27 cases of contagious diseases of minor importance reported, making the total number of cases reported 523, as compared with 495 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 81, and there were 4 deaths from pellagra. There were 33 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 173, of whom 130 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 563, corresponding to an annual death rate of 13.4 in a thousand of population, as compared with a rate of 13.7 for the preceding week and 14.6 for the corresponding period last year.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 13, 1910.

1. Acute Thoracic Empyema. Avoidance of Chronic Empyema. Rib Trephining for Suction Drainage, By Samuel Robinson.
2. Scoliosis, By E. H. Bradford and Robert Soutter.
3. On the Absorption of Protein and Fat in Pulmonary Tuberculosis, By A. E. Austin, Mabel Ordway, and Ruth Montague.
4. A Rapid Presumptive Test for Diarrhœa Caused by the Gas Bacillus, By Arthur I. Kendall and Richard M. Smith.

2. **Scoliosis.**—Bradford and Soutter describe the essentials in treatment of scoliosis as follows: 1. A careful examination of the condition of the back, not only as to the curves and contour, but also to the normal rigidity and lack of strength of the back muscles. 2. Where needed, the use of such exercises as will strengthen the muscles, and such flexibility exercises as will correct abnormal stiffness. These flexibility exercises must be carefully applied so as to stretch at the part of the maximum stiffness, and not increase the flexibility of the flexible portions of the spine. 3. In the more severe cases the constant use of some form of pressure appliance, with the pressure applied to the convexity of the curve, and without pressure on the concavities. 4. These cases need oversight and direction at stated intervals during a long period. That is, during the rapidly growing years such oversight and direction should be given by some one familiar with the course of affections of this class. Such patients also need the constant direction of a parent or nurse or physician who will enforce strict and persistent attention to the details of treatment, and of a family physician who will pay attention to the observance of the laws of health, diet, metabolism, etc. 5. The affection is not to be regarded as a disease, but as a fault of growth, and for this reason care is needed for the patient during the growing years. 6. The combined efforts of a family physician and expert specialist are of benefit in cases with this distortion, and gratifying results may be expected to reward persistent efforts.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 15, 1910.

1. The Relationship of Neurology to Preventive Medicine. By Joseph Collins.
2. Papillary Cystadenoma of the Kidney, with Myoma of the Uterus and Spinal Caries, By George Erety Shoemaker.
3. Combined Forceps and Tonsillar Separator, By Cullen F. Welty.
4. Diffuse Idiopathic Hypertrophy of the Mammary Glands of the Female, By Henry Albert.
5. A Study of Mistaken Diagnoses, Based on an Analysis of 1,000 Autopsies and a Comparison with Clinical Findings, By Richard J. Cabot.
6. The Electroeardiogram in Clinical Diagnosis, By L. F. Barker, A. D. Hirschfelder, and G. S. Bond.
7. Rhachitis, By J. W. Van Derslice.
8. Ætiology, Diagnosis, and Treatment of Colonic, Sigmoidal, Rectal, and Anal Affections in Infants and Children under Twelve Years of Age, By Samuel Goodwin Gant.
9. Tuberculosis of the Female Organs of Generation and the Peritonæum, By J. Riddle Soffe.
10. A Forecast of the United States Pharmacopœia, By M. F. Wilbert.
11. A Simple Bloodless Operation for Hæmorrhoids, By Louis J. Hirschman.
12. A Case of Pernicious Anæmia, By B. P. Rosenberry.
13. Adiposis Dolorosa (Dercum's Disease) in Mother and Daughter, By Albert Hynson Carroll.
14. Anaphylactia. A Preliminary Note, By Leonard K. Hirshberg.
15. The Surgical Importance of Accessory Renal Arteries, By Daniel N. Eisendrath and David C. Strauss.
16. Gangrene of the Lung with Trichamonata as the only Apparent Ætiological Factor, By G. C. Dolley.
17. The Nonoviparous Female Hookworm, By William Litterer.
18. Cultivation of Adult Tissues and Organs outside of the Body, By Alexis Carrel and Montrose T. Burrows.

4. **Mammary Hypertrophy.**—Albert reports the case of a girl, thirteen years of age, of a nervous temperament, who had had the usual diseases of childhood. Enlargement of the breasts began in June, 1903, a year later the breasts were amputated, in two operations, the left breast, in July, 1904, weighing 28 pounds, the right, in August of the same year, weighing 26 pounds. Recovery was uneventful. She was married in 1909, was delivered of a six months' developed infant, and is now enjoying good health. Albert has searched the literature and finds that of the seventy reported cases of diffuse hypertrophy of the female mammæ, in eighteen the enlargement occurred during gestation; most of the others occurred about the time of or soon after puberty. Sixty-two were bilateral. Fifty-eight per cent. of the cases not associated with gestation developed between the ages of eleven and sixteen, and 40 per cent. during the ages of fourteen and fifteen. The ætiology of the condition is obscure, says our author. It is very probably due to the action of the same hormones that produce the physiological enlargements. Pathologically, the condition is a simple diffuse hypertrophy, involving both glands and connective elements. The increase in the gland elements occurs principally in the cases occurring during gestation, whereas the connective tissue increase usually predominates in those not associated with that condition. The process appears to be essentially an exaggeration or continuation of the enlargements that affect the gland normally at puberty and during gestation. The weight of the glands varies from 1⅓ to sixty-four pounds, the average of all cases being seventeen pounds. In one instance, one of the glands weighed sixty-four pounds and both glands, 124 pounds. In two instances the combined weight of the two glands exceeded the weight of the remainder of the body. In cases associated with gestation, lactation is, as a rule, normal. In those hypertrophies not associated with gestation the glands seldom functionate, even after pregnancy.

5. **Mistaken Diagnoses.**—Cabot bases his observations upon an analysis of 1,000 autopsies and a comparison with clinical findings. He concludes: Never make a diagnosis of uræmia in a patient seen for the first time in an acute illness characterized by coma or convulsions. Such diagnoses rarely turn out right. Never make a diagnosis of ptomaine poisoning without definite chemical evidence. General peritonitis or a tabetic crisis is usually the correct diagnosis. Make no diagnosis of hysteria, neurasthenia, or psychoneurosis in a patient whose

symptoms begin after the forty-fifth year. The actual diagnosis is likely to be arteriosclerosis, hyperthyreoidism, dementia paralytica, or pernicious anæmia. Diagnoses of tertian malaria in patients whose symptoms resist quinine more than three days are almost invariably wrong. Bronchial asthma beginning after forty usually spells heart or kidney disease. Epilepsy beginning after forty usually means dementia paralytica or cerebral arteriosclerosis. Typical migraine is often a symptom of unrecognized brain tumor or chronic nephritis. Most cases of "bronchitis" mean tuberculosis, bronchopneumonia, or multiple bronchiectasis cavities. Aside from the immediate results of acute infections (such as scarlet fever, diphtheria, amygdalitis, and pneumonia) "acute" nephritis usually turns out to be chronic. Acute gastritis and gastralgia usually mean appendicitis, gallstones, or peptic ulcer. Pus in or near the liver is often mistaken for serous or purulent pleurisy, for it produces identical signs in the right chest posteriorly. An x ray picture of the shin bones may give the first hint of an active syphilitic process in the joints or internal viscera. Systolic or præsystolic murmurs, heard best at the apex of a markedly enlarged heart, rarely mean valve lesions. Diastolic murmurs at the base of the heart are very uncertain evidence of aortic disease unless there are characteristic jerkings in the peripheral arteries. Myocarditis is a diagnosis which should never be made clinically. Besides the direct evidence afforded by the history and the various methods of physical and chemical examination, diagnosis profits much by taking account of certain familiar pathological chains or groups of them. Given one or two members of the group it is often wise to act as if the other were present, provided, of course, that the direct evidence in no way contradicts us. Cerebral localization applied to tumors, hæmorrhages, and the like is still in its infancy. The clinical diagnosis of the so called diseases of the blood is the easiest and safest in medicine.

7. **Rhachitis.**—Van Derslice remarks that rhachitis is a preventable disease. The diet is of the first importance. In breast fed children it becomes necessary to influence the mother in such manner as to make her milk suitable for the child. In many of the cases it becomes necessary to supplement the breast by suitable artificial foods. As the lack of fats has so long been emphasized as a causative factor there is danger of putting too much stress on this phase of the diet and of undoing good efforts by adding more fat than can be handled with advantage by the child. Good hygiene with plenty of fresh air is a prerequisite. No diet can be set down that can be recommended in these cases. As a general rule cow's milk should be given, but as these cases occur in children fed on the starchy foods it must be remembered that the stomach will need much education in the digestion of this food, and the initial use of milk must be in very attenuated doses. Expressed beef juice, raw eggs, orange and lemon juice, all have a place in the dietary. The use of drugs should be limited to the needs of the individual. Syrup of the iodide of iron is frequently indicated. For the digestive weakness the addition of malt or of molasses gives very favorable results. In clinical use the addition of a considerable amount of New Orleans molasses has the same effect as an extract of malt. The intercurrent disorders should be given appropriate treatment. The tendency to deformities, such as bow legs, knock knees, and spinal curvatures, must be borne in mind, and precautionary steps be taken by preventing undue strain on these parts. In regard to remedying these deformities, it is well to remember that they are very common in childhood and rare in adult life. The tendency of Nature is toward repair.

MEDICAL RECORD

October 15, 1910.

1. Practical Points in the Management of Poliomyelitis and Its Sequelæ, By Henry Ling Taylor.
2. Bacterial Vaccines in the Treatment of Diseases among the Aged, By Henry A. Craig.
3. Complement Fixation Tests in Thromboangiitis Obliterans, By Leo Buerger and David J. Kaliski.
4. The Relative Value of Symptoms, Physical Signs, Tuberculin, and The X Ray in the Diagnosis of Tuberculosis, By Henry F. Stoll.
5. Personal Observations on the Ehrlich-Hata 606, By Abraham L. Wolbarst.
6. Report of Three Cases Treated with Antigonococcus Serum, By M. Zigler.
7. A Fracture of the Pubic Bone, By Truman Abbe.

3. **Thromboangiitis.**—Buerger and Kaliski say that pathological studies of thromboangiitis have shown that most of the larger arteries, and sometimes the veins as well, are obliterated over a large extent of their course. All stages in the occlusive change may occur in the various vessels of an extremity or in the same vessel in different parts of its course. The closure of the vessels is effected by red obturating thrombi; these become organized, vascularized, and canalized. Recent red thrombosis may involve large portions of arteries or veins and is not secondary to its gangrenous process. It occurs even when no gangrene is present. In short, we are dealing with lesions of considerable extent apparently initiated by the formation of occlusive thrombi, chiefly in arteries, but not confined to these, followed by organization or healing with an attempt at the production of a collateral circulation. From the pathological standpoint the marked periarteritis, which is so frequently a characteristic lesion, might suggest syphilis, however, a thorough study failed to reveal the presence of the *Spirochæta pallida* in a large number of vessels removed from amputated limbs. In short, nothing definite was ascertained in histological studies to throw light on the ætiology of the process. Clinically, he has rarely been able to elicit a history of lues. Only two patients out of a total of about eighty cases had had a syphilitic infection. It is rather striking that males only seem to be affected by the disease. Were syphilis responsible, we should expect a certain proportion of female patients in our large list. In view of the fact that the suspicion of lues is still so frequently entertained in attempts at explaining the cause of the condition, it seemed advisable to make the usual serological tests. Twenty-nine consecutive cases were tested by Dr. Kaliski. The clinical course of many of these patients had been followed by Dr. Buerger for a number of years, and careful notes made. In seventeen cases, the diagnosis was con-

firmed by the pathological examination of vessels of the amputated limbs; in the remaining twelve the diagnosis was clear, and not a single doubtful case was included in the list.

5. **Personal Observations on Ehrlich 606.** "*The Ointment or Balsam.*" This, the reader is incontradictorily criticised by Fonssagrives in the

7. **Fracture of the Pubic Bone.**—Abbe reports a case of fracture of the pubic bone in a patient, seventy-four years of age, weight 120 pounds, of active health, who fell, striking on his left tuber ischii. Put to bed he was unable to turn over or to move the left leg fully at the hip. Thigh flexion to 45° was possible, but beyond that great pain was felt in the abductor muscles; full extension was possible and comfortable. The functions of the leg were normal. No ecchymosis or sign of displacement or abnormal position were visible. Moderately heavy percussion on the heel caused no pain, but heavy percussion gave pain in the pubic region and in the abductor muscles. Partial motion of the leg showed the flexion at the hip to be limited as in the active motion to about 45°, and abduction also to be somewhat limited. Pressing the great trochanters together caused pain, and a similar crowding together of the iliac crests gave the same pain. A separation of the iliac crests also gave the same pain. The left tuber ischii was tender, but only with a dull soreness, not the acute tenderness of the anterior region. Pressure on the symphisis pubis caused acute, cutting pain, accentuated about one and a half inches to left of the median line. This seemed to be the starting point of all the pains. There was no bladder or urethral trouble further than a slight irritability which the patient thought no more than common in cool weather, or when lying down. A diagnosis of fracture of the pubic bone was made and the pelvis strapped with a girdle of adhesive plaster and applied a firm bandage, giving marked relief and ability to turn in bed. Two days later the patient expectorated blood specked mucus, and moist râles appeared throughout the bases of his lungs. Strychnine, 1/30 of a grain three times a day, and some deep breathing exercises repeated every hour cleaned up that pulmonary congestion in forty-eight hours, and no further signs of pulmonary trouble developed. At the end of six weeks the patient was allowed to put his weight on his feet for a few minutes, and a week later he was walking around with a cane. The unsteady walk, with his feet far apart, soon disappeared, and the gait six months later was as good as ever. At twelve weeks he came to the office and an x ray picture of the pelvis confirmed the diagnosis of fracture of the left pubic bone.

BRITISH MEDICAL JOURNAL.

October 1, 1910.

1. Ancient Humorism and Modern Humorism, By Charles Richet.
2. Absence of the Falloppian Tubes and of Menstruation. Monthly Recurring Attacks of Peritonitis: Relief following an Operation Joining Ovarian Pouches with the Uterine Cavity, By W. G. Spencer and Alban Doran.
3. An Address Entitled "The Quickening Spirit." By Leonard Williams.

Seventy-eighth Annual Meeting of the British Medical Association.

Section of Surgery.

4. Introductory Remarks by the President, Sir Victor Horsley.
5. Discussion on the Surgical Treatment of Graves's Disease, Introduced by Professor Kocher.
6. A Method of Establishing Colotomy Openings and Permanent Ureteral Fistulæ, By C. J. Bond.
7. The Radical Abdominoperineal Operation for Cancer of the Rectum and of the Pelvic Colon, By W. Ernest Miles.
8. A Case of Secondary Suture of the Circumflex Nerve, By Robert Kennedy.
9. On Certain Factors that Influence the Immediate Results of Surgical Operations, By George W. Crile.
10. The Operative Treatment of Chronic Mucous and Ulcerative Colitis, By P. Lockhart Mummery.
11. Conditions Liable to be Mistaken for Cancer of the Stomach, By Alexis Thomson.
12. Conditions Simulating Cancer of the Stomach, By F. D. Bird.
13. The Early Diagnosis and Treatment of Cancer of the Stomach, By Herbert J. Paterson.
14. The Action of Gastrointerostomy in Cases of Gastric and Duodenal Ulcer in Which there Is no Mechanical Difficulty, By C. Mansell Moullin.
15. Excision of Gastric Ulcers, By E. Deanesly.
16. The Clinical Manifestations, Diagnosis, and Treatment of Hydatid Disease of the Liver, By C. MacLaurin, M. B.

Section of Tropical Medicine.

17. Rupture of Hepatic Abscesses into the Lungs. By James Cantlie.
18. Sandfly Fever (Phlebotomus Fever or Pappatacifieber) in Cairo, By Llewellyn Phillips.
19. Dysentery, By G. H. Fink.
20. The Incidence of Bilharziosis in Egypt and its Clinical Manifestations, By Frank Cole Madden.
21. Typhoid and Paratyphoid Fever in Egypt, By Llewellyn Phillips.
22. Human Botryomycosis, By R. G. Archibald.
23. The Effect of a Mosquito Net on the Air within It. Based upon Eighty Analyses of the Air Inside and the Air Outside the Net, By G. Duncan Whyte.

5. **Surgical Treatment of Graves's Disease.**—Kocher speaks of the thyreogenous origin of Graves's disease and warns against the iodine preparations in this disease. He says that if we are able to show that the primary cause of Graves's disease may be an excessive irritation of the nervous system, affecting especially the sympathetic branches of the thyreoid nerves, and that the same pathological effect may be produced by the excessive influence of iodine on a gland already altered in its histological constitution, or by excessive reaction of the same under pathological circumstances, as after acute infections, we might seek for rational treatment in the first place by way of removing the causes of the pathological condition. Experience proves that this is not sufficient in most of the cases. Rest is the great remedy of medical men when excessive excitement has given rise to a sudden outbreak of Graves's symptoms. Most of the remedies given besides the rest cure are of no use, especially the digitalis preparations given so frequently. He thinks the best medical treatment is by phosphorus preparations. But, on the whole, it is best for the medical man to tell the patient to do nothing and to do nothing himself. To exclude all iodine preparations is the best means against what is called "iodine Basedow." To direct careful attention to this point is in many cases more important than the giving of

any remedy. Excessive functional activity has in most cases led already to histological changes the same as those produced by infectious diseases, and so conventional treatment fails to produce the desired effect. We must not wait and risk the prolonged poisoning of the system which will produce irreparable organic changes in the heart muscle, the kidneys, the liver, the brain; we must treat the diseased organ itself and diminish its activity by diminishing the quantity of secreting cells; we must exclude, by cutting the superior pedicle, the nerve influence, and produce partial atrophy by ligature of the vessels or perform partial excision in sufficient quantity to reduce the secretion to normal degree. Surgical interference is the only sure and quick way to come to a real cure, but it must be kept in mind that it should be done only after most careful consideration. He gives the results of his practice on the ground of these considerations, and states that he has performed 4,394 excisions of goître. These include 469 cases of Graves's disease. The total mortality of these 469 cases is 3.4 per cent., but the mortality has always gone down, being at five per cent. when he gave a report of 176 cases, four years ago, diminishing in the 155 cases of Graves's disease which the fourth thousand of his goître operations include to 2.5 per cent., and finally in the seventy-two cases of Graves's disease operated in since January of this year only one patient died, which means a mortality of 1.3 per cent. He hopes to be able to bring the mortality still lower down, as has been the case for ordinary goître. The contraindications he mentions are the continuous poisoning of the system with thyreoid secretion, which brings on in long standing cases organic changes in the heart muscle, in the kidneys, in the liver, in the pancreas, and in the cells of the cortex cerebri; alimentary glycosuria, albuminuria with nephritis, but the greatest risk is a combination with the status lymphaticus.

LANCET

October 1, 1910.

1. Malignant Disease of the Nasal Passages: Its Diagnosis, Pathology, and Treatment, By W. Stuart-Low.
2. The Essential Cause of Gastric and Duodenal Ulcer, By C. Mansell Moullin.
3. The Physique of the Phthisical, By H. de C. Woodcock.
4. A Symptom Complex in Ruptured Abdominal Hydatid, By J. E. Barling and D. A. Welsh.
5. Clinical Surgery in Japan, By Yoshihiro Takaki.
6. Henoch's Purpura with Enteric Intussusception. Reduction; Intussuscepted Area Gangrenous; Resection of Two Feet Five Inches of Gut; Immediate End to End Union; Recovery, By H. Betham Robinson.
7. The Relief of Symptoms of Prostatic Obstruction by Electrical Treatment, By Joseph S. Bolton.
8. A Reminder of the Battle of Omdurman. An Account of the Removal of Half a Shrapnel Bullet which had Remained Embedded in the Leg of an Arab for Eleven Years after the Battle, By J. B. Christopherson.
9. The Ætiology and Diagnosis of German Measles (Rubeola), By Clifford Deards.
10. Stovaine: Its Use in the Treatment of Shock, etc., in Injuries of the Lower Extremities, By George Thom.
11. The Ownership of Medical Prescriptions, By H. Wippell Gadd.

1. **Malignant Disease of the Nasal Passages.**—Stuart-Low observes that pain is not to be relied upon as an indication of malignant disease in the nose. Increasing and persistent stuffiness, especially if unilateral, is an important point as regards diagnosis. Recurring and increasingly severe hæmorrhage, especially if unilateral, is always a suspicious symptom. A combination of hæmorrhage and increasing stuffiness is often a serious indication of new growth existing. The making of an early diagnosis is of great importance. It is imperative to make a thorough and systematic examination in all obscure cases of nasal disease, and to remove early a piece of any obstruction in the nasal passages for a pathological report. It is of great importance when there is malignant disease to operate as soon as possible after a diagnosis has been made to secure a successful removal. It is advisable to adopt the canine fossa route in operating for the extirpation of intranasal tumors. Innocent and malignant polypi are likely to coexist.

3. **Physique of the Phthisical.**—Woodcock gives a table indicating appearances coincident with phthisis though not generally recognized, and such universally recognized physical signs as ratio of depth of chest to width, presence of winglike scapulæ, etc. The most important sign is a peculiar appearance of the soft palate. The phthisical soft palate is of a pearly bluish white tint, and is covered with a somewhat mucoid moisture. It certainly differs from the chlorotic palate. He places it as a sign of sinister import equal to the rapid phthisical pulse, or the temperature, pulse, and respiration reaction to fatigue. Other signs are the hand ratio, found by comparison of the length of the hand, from the ridge of the ulna in an oblique line to the end of the largest finger, with the breadth across the bend of the knuckles. Clubbing and curving of the ends of the fingers. Enlarged deep glands above the clavicle, etc.

10. **Stovaine.**—Thom calls attention to the use of stovaine in combating shock due to severe injuries of the lower extremities. The injection is given before removal of clothes, emergency dressings, or splints to alleviate pain during these procedures and in the subsequent examination of the injuries. The immediate improvement after injection is very noticeable. Pain and restlessness disappear. The pulse improves rapidly, the color returns, and the patient's distress diminishes. Thus all the symptoms of shock are alleviated or abolished. During the subsequent operative procedures the patient is encouraged to drink some brandy or other stimulant, so obviating the necessity of giving rectal salines, which may not be retained, or incurring the risks associated with intravenous injections. The operation is performed without that undue haste so often necessary in cases of severe collapse with general anæsthesia. The delay with its associated risks of sepsis and hæmorrhage awaiting the rally of a profoundly collapsed patient, in whom a general anæsthetic would be inadvisable, is practically abolished. Postoperative shock in these patients is also greatly diminished, both in intensity and duration, as for many hours after the operation pain and restlessness are absent in nearly every case. The absence of nausea and sickness relieves the patient of an additional cause of collapse and enables the continuance of stimulant treatment by the mouth.

PRESSE MEDICALE.

July 2, 1910.

1. Serotherapeutics and Anaphylaxis in Cerebrospinal Meningitis, By V. Hutinel.
2. A New Local Anæsthetic: Quinine and Urea Bichloride, By Gaudier.
3. 200 Cases of Wassermann Reaction, By C. Garin and C. Laurent.
4. Social Hygiene. Protection of Mothers and Infants in the Department of the Seine, By G. Schreiber.
5. Idiopathic Contractions and Spasms of the Stomach, By G. Leven and G. Barret.

2. **Quinine and Urea Bichloride as Local Anæsthetic.**—Gaudier observed that local anæsthesia by injection or application of quinine and urea bichloride is not so rapid and not so absolute as with cocaine, but lasts equally as long. The absence of vasoconstriction is unpleasant, especially in operations of the mucous membranes, as bleeding will obscure the field; but this can be partly overcome by addition of adrenalin. But the advantage of this local anæsthetic is that it can be used in such cases in which cocaine is contraindicated.

3. **Wassermann Reaction.**—Garin and Laurent report 200 cases of Wassermann reaction, conducted absolutely according to the first method of Wassermann, and find that the reaction is specific and very reliable.

July 6, 1910.

So Called Primary Neuralgia of the Rectum, By E. Parmentier and Joseph Foucaud.

Neuralgia of the Rectum. — Parmentier and Foucaud review the methods of treatment applied in neuralgia of the rectum by Loomis, of New York (chloral, bromides, acetphenetidin, cocaine suppositories, and morphine); Gant, of New York (applications of camphor, capsicum, and chloroform); Davis (belladonna); Einhorn and Gant (electrotherapy); Albu (dilatation, and elongation of the nerves); but have found that brief tepid douches followed by hot douches, of three minutes' duration, are very beneficial.

July 9, 1910.

1. Resection of the Rectum by Abdominoanal Route with Conservation of the Sphincter, By Abel Despardins.
2. Spirotrichosis from Inoculation, By De Beurmann and Louis Ramond.
3. Pleurisy and Hydrothorax Complicated with Heart Trouble, By René Cruchet and R. Lautier.
4. Physiology of Medical Electricity. Electrotherapy in Its Relation to Reeducation and Psychotherapy, By A. Zimmern and Paul Cottenot.
5. Trigidital Examination of the Head of the Femur. Its Importance for Diagnosis and Prognosis of Congenital Luxation of the Hips, By J. Gourdon.
6. Measurements of the Total Stomach Contents. A Study of the Average Stomach Secretion, By Leon Meunier.

5. **Trigidital Examination of the Head of the Femur in Congenital Luxation of the Hip.**—Gourdon describes his method, which is based upon the anatomy of the head of the femur. In left sided luxation the left hand, in right sided the right, grasps the knee of the diseased side, with the child placed on its back, bending the knee lightly, but bending the leg as much as possible upon the abdomen. The right hand with thumb, index, and middle finger examines the head of the femur.

6. **Examination of Stomach Contents.**—Meunier, finds that the ingestion of a suspension of kaolin, ten grammes in 100 c.c. of water, is the best method for examination of stomach contents. The patient drinks the suspension shortly before the stomach contents are withdrawn. The contents thus withdrawn form a milky suspension entirely homogeneous, to which the various tests are then applied as under other conditions.

July 13, 1910.

1. Syphilitic Pleurisies, By H. Roger.
2. Prolongation of General Anæsthesia, By L. Camus.

2. **Prolongation of General Anæsthesia.** — Camus says that ethyl chloride can be used as an anæsthetic without any risk of asphyxiation, and describes an inhaler to be used with ethyl chloride on a patient either in the erect or supine position.

July 16, 1910.

1. Clinical Radiology. The Primitive Triangle in Hepatization of the Lungs, By E. Weil and G. Mouriguand.
2. A New Method of Ureteral Catheterization, By Gudin.

July 20, 1910.

Surgical Treatment of Secondary Strabismus, By A. Terson.

July 23, 1910.

1. Serotherapy of Snakebite, By Maurice Arkus.
2. The Inundations of Seine Have no Influence on Frequency of Typhoid Fever, By Jacques Bertillon.
3. Prognosis and Treatment of Talipes Equinovarus, By C. Ducroquet.
4. An Appeal for Prolonged Treatment of Fractures of the Humerus, By Henri Judet.

2. **Typhoid Fever and Inundations.**—Bertillon analyzes nosologically four inundations of Paris, ten of Dresden, and seven of Vienna, three in England, one in Mannheim, in all twenty-five inundations of cities of different types, and states that in none of them the inundation was followed by a typhoid epidemic. In one in Vienna there was an increase of typhoid fever appreciable, in all the other twenty-four a decrease took place. He concludes, therefore, that no relation exists between inundations and typhoid fever.

July 27, 1910.

1. Characteristics of the Oospora Family, By A. Sartony.
2. Distinctive Diagnosis of Syphilitic Chancre of the Tonsil and Chancriform Angina, By A. De Play and A. Sézary.

July 30, 1910.

1. Accident Insurance, By Léon Frubert.
2. A New Technique of Preparing Drugs, By Emile Perrot.

August 3, 1910.

1. Ureteral Catheterization with the Aid of a Guide, By J. Albarran.
2. The Criteria of Physical Development, By M. H. Dausset and P. Desforses.
3. Intravesical Separation of Urine and Catheterization of the Ureters, By Georges Luys.

1. **Ureteral Catheterization with the Aid of a Guide.**—Albarran criticizes an article written by Gudin, which appeared in the *Presse médicale* of July 16th; he remarks that Gudin had no right to

publish the article, which is misleading and unscientific.

August 6, 1910.

1. Chronic Enterocolitis Crisis. By H. Marcon.
2. The Third International Congress of Hygiene, By G. Schreiber.

August 13, 1910.

1. Study of a Family with Inherited Syphilis, By A. Barré and P. Gastinel.

August 17, 1910.

1. The Physiological Bases of Medical Electricity. The Value of Electricity in Treatment of Muscular Atrophy, By A. Zimmern and Paul Cottenot.
2. Pseudopregnancy from Ovarian Insufficiency, By Gaston Sardou.
3. Treatment of Abscess by Congestion since the Beginning of the Last Century, By J. Dochè.
4. Hæmatocele in the Pelvis from Cicatricial Stenosis of the Cervix Uteri, By J. Caraven.
5. Caseous Rhinitis, By N. Taptas.
6. Professional Maladies: Neuroses among Telephone Operators, By V. Thébault.

2. **Pseudopregnancy.**—Sardou reports five cases which were diagnosticated as pseudopregnancies, but one of them proved to be a true pregnancy. The patients were treated with ovarian organotherapy, which, in the nonpregnant women, brought on the menses.

August 20, 1910.

1. Postoperative Occlusion of the Duodenum, By P. Hardonin.
2. Acute Ileocolic Invagination in a Female Infant, Seventeen Months of Age, By Kirmisson and M. Moulonguet.
3. Ehrlich's 606 in Treatment of Syphilis, By J. Dumont.

3. **Ehrlich's 606.**—Dumont reviews the reports published on the use and therapeutical value of dioxydiamidoarsenobenzol, according to the papers published in the German medical journals.

August 24, 1910.

1. Intravesical Segregation of the Urine *vs.* Ureteral Catheterization, By G. Marion.
2. Tuberculosis in Postal and Telegraph Services, By René Grenier.
3. X Rays Treatment in Dermatology, By A. Barré.

2. **Tuberculosis in Postal and Telegraph Employees.**—Grenier gives a statistical review on the tuberculosis question among the employees of the postal and telegraph service and compares his results for the years 1895 to 1900, with those for the years 1901 to 1906.

August 27, 1910.

1. Heart Complications in Polymorphous Erythema, By P. Teissier and H. Schæffer.
2. Choreiform Movements in Tuberculous Meningitis, By A. Gonnet.

August 31, 1910.

1. Antihæmolytic Sera and the Phenomenon of Neisser and Doering, By Charles Foix and Henry Salin.
2. Wassermann's Serum Reaction in Forty-eight Cases of Leprosy, By Denis Montesanto and D. Sotiriadès.

2. **Wassermann's Reaction in Leprosy.**—Montesanto and Sotiriadès have made forty-eight Wassermann reactions in leprosy. They have found that the reaction is positive in tubercular leprosy (88.8 per cent.); in the mixed form of leprosy it was positive in 75 per cent.; while patients with anæsthetic leprosy gave a positive reaction in 16.6 per cent.

PRACTITIONER.

September, 1910.

1. Some Points for Consideration in Relation to the Surgical Treatment of Renal Calculus, By Sir Henry Morris, Bart.
2. Some Points Concerning Typhoid Vaccine, By Sir William B. Leishman.
3. On Vaccine Therapy, By T. J. Horder.
4. The Treatment and Pathology of Chronic Gastric Ulcer, By Charles Bolton.
5. On the Early Recognition of Cancer of the Womb, By Frederick McCann.
6. The Autointoxication of Epilepsy, By D. Moore Alexander.
7. Coli Uria, By H. Moreland McCrea.
8. Cases of Ataxia due to Disease of the Cerebellum or of the Adjacent Parts, By R. T. Williamson.
9. Notes on Peripheral Neuritis (Alcoholic), By John Wyllie.
10. The Part Played by Colloids in Physiology and Pathology, By G. Arbour Stephens.
11. Certain Urinary Reactions and Their Significance in Chronic Conditions of Faulty Metabolism, By Hubert Higgins.
12. A Retrospect of Otology, By Macleod Yearsley.

3. **Vaccine Therapy.**—Horder mentions three points which bear on the neutral limitations of vaccine therapy: The lack of some standard of virulence of the vaccine is one difficulty. This is a very great one. Particularly is it so in dealing with such microorganisms as the gonococcus, the pneumococcus, and Pfeiffer's bacillus. The variation in virulence seen in different strains of these and some other microorganisms renders tables of appropriate doses of vaccines prepared from them quite useless. 2. The ideal to be aimed at in the matter of freeing different parts of the body from microorganisms is another difficulty. Here, again, we want more statistical knowledge. A few *Bacilli coli* in the urine of a constipated patient, or in a patient suffering from a disease which is quite independent of colon bacillus infection, are too often regarded as enough evidence upon which to base a diagnosis. If some recent work of Conradi's is confirmed, it would appear that not only certain mucous passages, but also the solid organs of the body are, in health, constantly being invaded by small numbers of microorganisms, *Bacillus coli* and *Streptococcus fæcalis* especially, and that these are constantly being killed. A passage into the tissue of these and other microorganisms is always proceeding. If this is so, are we right in believing that this occasional presence of microorganisms necessarily means disease, or that we can hope to chase them all away by vaccines? 3. His third difficulty is the question of recurrences in such conditions as boils and pustular acne, after prolonged courses of vaccine treatment. He has seen several such cases—and not staphylococcal eases only—in which the response becomes less and less marked each time. What, then, is the net result of the treatment to our patients? Have we permanently weakened their resistance by the employment of artifically introduced antigen, or are the recurrences quite independent of our treatment? His opinion is that vaccine therapy is an effective method of combating an important factor—it may be the most important factor—in the struggle between the tissues and many infecting agents. He believes, however, that there are other factors in this struggle which are not touched by the use of vaccines,

and that this natural limitation does exist, though at present it is quite undefined.

4. **Chronic Gastric Ulcers.**—Bolton recognizes four pathological conditions of chronic gastric ulcers: Primary acute gastric ulcer, which is well known to be produced in several ways. Such ulcers run through the same stages as experimental ulcers do and heal in from three to four weeks, depending upon the size and depth of the ulcer. Multiple acute ulcers are liable to lead to some contraction of the stomach. These ulcers commonly produce no symptom unless a vessel is accidentally opened up leading to hæmorrhage, or the ulcer perforate. When the vessel which has been opened up is not occluded by a clot, or when the clot has broken down and the hæmorrhage is repeated, the ulcer may completely heal except for a hole in the centre leading into the vessel. On the other hand, their presence may be associated with an attack of gastric pain and vomiting, which, however, is never so severe as in the chronic form of the disease. Such acute ulcers are liable to occur at intervals in the same patient. In the absence of any obvious bacterial or other infection, which are known causes of this malady, a careful search should be made for a local source of infection such as pyorrhœa alveolaris, chronic appendicitis, suppuration of the sinuses, vaginal discharge, and so on. 2. Primary acute gastric ulcer with delayed healing (subacute gastric ulcer). The delay is brought about largely owing to motor insufficiency of the stomach, leading to necrosis of the granulation tissue of the base and excessive fibrosis of the same. Cicatrization is seen at the edges of the ulcer, which are quite smooth. The base is smooth and filling up, but active digestion in the centre may go on while cicatrization is proceeding and give rise to hæmorrhage late in the course of the disease. Considerable scarring of the stomach may result. The clinical history extends over a longer period and the symptoms are more pronounced than in acute ulcer, which heals in the usual time. 3. Chronic gastric ulcer. This ulcer is characterized by the absence of signs of tendency to heal, and also by its gradual extension. The base is usually thickened and excavated in the centre and the edges may be overhanging owing to digestion of the connective tissue under them. Whether this ulcer arises by a further process of delay so that the healing is completely stopped, in which case digestion of the base necessarily follows, must remain for the future to decide. 4. Secondary acute ulceration. Exactly how a chronic ulcer extends is a very interesting and important question. It may be that by acute exacerbations affecting the surrounding mucous membrane more or less extensively a chronic ulcer gradually increases in size. It may also increase in other ways.

5. **Early Recognition of Cancer of the Womb.** McCann summarizes the early signs and symptoms of uterine cancer: Irregular bleeding of any description, even if there are only traces; bleeding post coitum; watery blood tinged discharge; in the early stages almost complete absence of pain. The majority of the cases occurring between the fortieth and fiftieth years, the symptoms are regarded by the patient and her friends as due to "change of life." The medical attendant should guard against this assumption until he has proved that cancer does not exist. Bleeding, however slight, occurring after the menopause should give rise to the suspicion that cancer is present. If a patient with any of these symptoms comes for advice, a careful bimanual examination of the pelvic contents must be made before any treatment is recommended. An examination should be made even if bleeding exists, as much valuable time may be lost by postponement until the hæmorrhage has ceased. When examining note carefully the condition of the vaginal portion of the cervix, and the cervix proper, and remember that three fourths of all uterine cancer takes origin in these positions. Remember that there are high lying cervical cancers and cancers of the body of the uterus whose detection is only possible by the use of the curette or, exceptionally, by digital exploration. The microscope plays an important rôle in the diagnosis of early cases and in doubtful and suspicious cases. If there is a suspicious hard nodule or erosion or ulcer on the external os uteri, a piece the size of a pea or bean with a boundary of healthy tissue should be excised. If the portio vaginalis is intact and there is uterine bleeding, sufficient material for examination may be obtained by using a curette or sharp spoon. The pieces should be sent to an expert for report. If the report is favorable the patient will be reassured; if unfavorable, immediate operation is imperative. Early cancer can be cured by operation. Never treat cancerous ulcers with caustic; their appearance becomes masked, and valuable time is lost. It is an error to wait and observe in order to arrive at a diagnosis. In doubtful cases a diagnosis must, and can be, made in a few days.

October, 1910.

1. A Clinical Note Respecting Common Ailments, By Sir Dyce Duckworth.
2. Gonorrhœa. By Louis Wickham.
3. Nonspecific Sores, By C. F. Marshall.
4. Leucorrhœa, By Henry Jellett.
5. Varicose Veins, By Arthur E. Barker.
6. Pleurisy, By F. de Havilland Hall.
7. Pleurisy—Three Interesting Cases, By Guthrie Rankin.
8. Insomnia, By Donald W. C. Hood.
9. Hoarseness, By Herbert Tilley.
10. Tonsillitis, By Charles A. Parker.
11. Asthma, By Patrick Watson Williams.
12. Nose Bleeding, By E. W. Roughton.
13. Warts and Chilblains, By E. Graham Little.
14. Ringworm, By Phineas S. Abraham.
15. Stammering, By Hamilton Graham Langwill.
16. Nævi—Treatment by Liquid Air and Solid Carbon Dioxide, By J. L. Bunch.
17. Certain Sprains, By Frank Romer.

EDINBURGH MEDICAL JOURNAL

September, 1910.

1. An Unusual Case of Chronic Interstitial Pneumonia Following Influenza, By Arthur J. Hall and J. M. Beattie.
2. The Care of the Infant and Young Child (to Five Years) in Edinburgh, By A. Dingwall Fordyce.
3. Acute Pancreatitis, Considered in Relation to Three Cases Occurring in General Practice, By R. J. Dick.

3. **Acute Pancreatitis.** — Dick reports three cases of acute pancreatitis. He concludes that a study of the literature dealing with acute pancreatitis shows that there is a strong consensus of opinion that gallstones are a preeminent mechanical factor in producing the disease. Consideration of his three cases, in all of which gallstones were ab-

sent, shows conclusively that, however potent a cause cholelithiasis may be in producing many cases of acute pancreatitis, the latter cannot be said to be essentially dependent on the presence of gallstones or their mechanical effects. It is admitted that gallstones are exceedingly common, and in many cases they are frequently passed into the duodenum and can be recovered from the fæces. It must surely happen that whenever a gallstone is passing into the duodenum through the ampulla of Vater, a stage in its transit must be reached—and the process might be arrested for a time at that stage—when it only partly fills the ampulla, and thus converting the common bile duct and duct of Wirsung into a continuous channel. Retrojection of bile might therefore occur in every case of gallstones when a stone was being passed into the duodenum, even if the necessary conditions as effecting the junction of the common bile duct and the duct of Wirsung only lasted for a few minutes. It has been suggested that the infection arises because of the existence in the duodenum of chronic catarrh. In this connection may be mentioned the point of alcoholism; in two of his cases this was well marked, and both the patients suffered from gastroduodenal catarrh, largely no doubt due to alcohol. When, however, one considers the enormous number of people who suffer from gastroduodenal catarrh, alcoholic or otherwise, and the few in whom acute pancreatitis develop, it is hard to see how the former can be a really potent factor in producing the disease. The presence of a chronic inflammatory condition in the duodenum would no doubt favor bacterial invasion of the duct of Wirsung; but in this connection it is noteworthy that many cases have been recorded in which the exudation in the neighborhood of the affected pancreas was sterile. The association of hæmorrhage into and around the pancreas is in many cases of acute pancreatitis so notable that it has been regarded as a cause of the disease.

GLASGOW MEDICAL JOURNAL.

September, 1910.

1. The Treatment of Operable and Inoperable Carcinoma of the Mamma, By Sir George Thomas Beatson.
2. The Action of Thiosinamine, By Frank Charteris.
3. Notes of Some Cystoscopic Cases, By J. Mill Renton.
4. Notes on Some Old Glasgow Institutions with Medical Associations, By Hugh A. M'Lean.

2. **Allyl Sulphocarbamide.**—Charteris has made experiments with allyl sulphocarbamide (thiosinamine), which drug was first introduced by Hebra in 1892, as a remedy against lupus. In the same year Unna stated that it was a powerful general tonic upon the system at large, causing diuresis and diaphoresis, and that it had a marked resolvent action on scar tissue. The method in which thiosinamine acts is not understood. It has been ascribed to a direct local action on the pathological fibrous tissue, or indirectly to some influence exerted through the blood, possibly by the leucocytes. Charteris has carefully collected the literature on this drug and from the opinion of others and from his results, he states that thiosinamine preparations produce no definite alteration in the blood count whether administered by the mouth or by subcutaneous injection. Even when this administration is prolonged over weeks the blood undergoes little change. There is no evidence of chæmotaxis. The therapeutic results from thiosinamine treatment have been disappointing. The drug, though usually well borne, may produce poisonous symptoms.

MILITARY SURGEON.

October, 1910.

1. Camps of Instruction for Militia Medical Officers in 1909, By George S. Crampton.
2. House Construction in the Tropics, By Henry H. Rutherford.
3. Mathematics and Medicine, By Louis C. Duncan.
4. The Red Cross First Aid Corps: A Plea for Its Support by the Association of Military Surgeons, By Gustavus M. Blech.
5. Infection of Southern Recruits with Intestinal Nematodes, By Albert G. Love.
6. Venomous Snakes of the United States, Their Bites and Treatment, By W. Culbert Lyon.
7. A Case of Catatonic Dementia Præcox and Its Economic Importance to the Naval Service and the Government, By Heber Butts.
8. A Freezing Microtome, By Norman Roberts.
9. Variola Hæmorrhagica, By R. E. Ebersole.
10. Report on Medical Conditions in Liberia, By Percy M. Ashburn.
11. The Private Sanitary Filipino Scouts, By E. L. Ruffner.

6. **Venomous Snakes of the United States, Their Bites and Treatment.**—See the Editorial in the *New York Medical Journal*, October 15, 1910, p. 779.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of April 18, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair.

(Concluded from page 792.)

ALCOHOLISM IN WOMEN.

In its Effects upon the Mind and Nervous System.—Dr. Graeme M. Hammond said that in women the habit of drinking was more easily formed and more difficult to cure than in men. In many cases they were born inebriates and remained so. To-day women were drinking more than ever before. Pathological drunkenness was characterized by manifestations of motor explosion and by attacks of melancholia or mania. These were short in duration and followed by stuporous sleep, and generally there was complete forgetfulness of what had taken place. This form of drunkenness was commonly observed in those who showed a congenital intolerance for alcohol, in hysterical and neurasthenic subjects, and in mental defectives. In this, women, who as a class were more intolerant of alcohol than men, rarely exhibited the tendency to violent actions, probably because the instincts of the female differed from those of the male. As James had truly remarked, "The instinct of the man is to fight and that of the woman is to nurse and protect." Hence in women we are more apt to see symptoms of melancholia or mild mania. Delirium tremens was an acute psychosis occurring in chronic alcoholism, and in his experience was decidedly less common in women than in men. This was probably due to the fact that, generally speaking, it took less alcohol to intoxicate a woman than a man, and, again, women seldom indulged in prolonged sprees to the extent that men did. Even in dipsomaniac women delirium tremens was not very frequently met with. When it did occur it differed in no essential detail from the same psychosis in men. It was no doubt seen more often in women of the lower orders of society than in those of greater wealth, probably more on account of the difference in the quality of the intoxicant than of the quantity consumed.

Korsakoff's psychosis, in which from alcoholic toxæmia there developed a multiple neuritis, with confabulation, loss of recent memories, and defective memory detention, was, again, more often seen among women of the poorer class than in the well to do. In these cases also he believed it was more often the quality than the quantity of the alcoholic beverage which was responsible. He had used the term "alcoholic toxæmia," but he was of the opinion that in many instances at least the condition was due rather to other deleterious substances contained in the liquor than to the alcohol itself. Were this not so, Korsakoff's syndrome, in view of the enormous amount of alcohol consumed by the public, would undoubtedly be of much more frequent occurrence than it was. The disease presented the same clinical picture in both sexes, but the prognosis for complete recovery, never excellent, was better for men than for women, on account of their greater physical vigor and stronger vitality. While alcohol no doubt sometimes gave rise to a pseudoparesis, in all his experience he had never seen a single instance in which true paresis was due to this cause. As to epilepsy, it seemed certain that only in the long run, after many years of abuse, did alcohol occasion this affection. In dipsomania there was more moral degradation in women than in men. There developed a neurasthenic state, with deterioration of character, so that it seemed as if the finer edge of their ethical feelings was blunted. Of course, there was no such moral degradation as was seen in chronic alcoholic dementia, but they became less truthful, less careful in attending to the needs of their children and the household, less mindful of the little niceties and conventionalities which constitute refinement. It was doubtful, he thought, whether a cure could ever be effected.

In its Effects upon the Circulatory System.—Dr. Louis F. Bishop said that alcoholism was a definite clinical condition, easily recognized by a physician of experience. The victim of this, having passed from the class of those who used alcohol to that of those suffering from alcoholism, the circulatory system had an important relationship, closely allied to that of the nervous system, in the transition, in that it was through the circulation that the reactionary effects of alcoholic stimulation were manifested, which reactionary effects called for fresh stimulation in the subject of alcoholism. With regard to this system, there were two distinct stages always to be borne in mind, or else a clear comprehension of the subject could not be arrived at. In the first the changes in the circulatory organs were functional, a condition which might, however, be prolonged up to the end of the patient's life; in the second, which occurred in other individuals, there were true organic changes in the heart, bloodvessels, and kidneys. Still, it was difficult to prove that alcoholism, uncomplicated by food poisoning, the effects of other ingredients than alcohol in intoxicating liquors, or the effects of the resulting congestions and inflammations, really produced arteriosclerosis. The victim of alcoholism, it was true, seldom escaped these secondary causes; but when this was the case we had examples such as one at times found in the well to do and well cared for class of individuals who attained to a great age while constantly suffering from alcoholism. He had many times seen patients die from the effects of alcohol and alcoholic delirium upon the heart and bloodvessels, and this was no doubt also the experience of every one having to do with the care of patients in public hospitals. This was directly traceable to the exhaustion of the functions of the circulation, depriving the heart and bloodvessels of their tone and contractility.

Acute and chronic alcoholism seriously damaged the heart. Death from delirium tremens was a result of the failure of the heart muscle, and death from chronic alcoholism, when this was not complicated by other conditions, often came about from an excess of epicardial fat, while the whole organ was hypertrophied and dilated. The muscle bundles were separated by fatty infiltration, and the fibres themselves showed fatty degeneration. In spite of the changes due to alcoholism, however, individuals in easy circumstances, in whom there was no demand, either by physical labor or as the result of disease, for any extra heart force, might survive for a long time. In beer drinkers, particularly those who did heavy labor, the heart was pretty sure to give out in the course of time, and they suffered from the breathlessness which went with a weak heart muscle. It was almost an axiom in medicine that pneumonia was fatal to alcoholics, a result due partly to the impairment by alcoholism of the tonicity of the cardiac muscle and partly to the changes already noted. The effect of alcoholism upon the bloodvessels was analogous to that upon the heart, and the dilatation of the superficial vessels, often accompanied by a tendency to sweating and by general lividness of the surface of the body, signified the loss of tone in the muscular coat. In general, alcoholism resulted in low blood pressure, though, as it went on, and disease of the kidneys was engrafted on the condition, this gradually merged into high blood pressure. In the opinion of the speaker, however, such a change did not occur without other complications than pure alcoholism, so that the latter could not be assigned as a usual cause of arteriosclerosis.

The effect of alcohol upon the kidneys was definite and direct, so that almost all alcoholics suffered in a greater or less degree from interstitial nephritis. When this reached the point at which the kidneys could not do their work at ordinary blood pressures, the pressure was reflexly raised, and a vicious circle was started which led to hypertrophy of the heart, arteriosclerosis, and the clinical picture of Bright's disease. It had always seemed to him that the latter was much more apt to result in those who drank poor grades of stimulants, which were often contaminated by poisonous adulterations. The effect of alcohol on the liver resulted directly in a great many cases of cirrhosis, and, a clinical fact which was not readily explained, women were susceptible to this condition from smaller amounts of alcohol than men. The whole question of the relation between alcoholism and the circulatory organs was a complicated one. Probably a more frequent cause of disease in these organs was to be found in the absorption from the gastrointestinal canal of the products of bad food chemistry, which was closely connected with the appearance of indican in the urine. This occurred very frequently in those whose digestive organs were disturbed by alcoholic indulgence and the overingestion of food often met with in such subjects. In discussing this matter it was difficult to isolate one topic from another, but in the attempt to do so he certainly had had no intention to minimize the evil effects of alcoholism.

Dr. Charles E. Atwood said that the treatment of alcoholism in women constituted one of the most serious problems of the physician. Very little could be accomplished without the cooperation of the patient and her family. With such cooperation, a cure could be effected, but relapses were frequent. A very thorough examination of the physical condition of the patient was absolutely essential. It was usually desirable to withdraw all alcohol quickly, but sometimes this was attended with unpeasant consequences or even danger, and in nearly all cases when it was withdrawn some substitute stimulant, such as strychnine, was required to sustain the patient. In some cases a change of environment was requisite. At the Vanderbilt Clinic a measure of success had been obtained by combining several elements of therapeusis. A number of patients had been brought there, at the speaker's suggestion, by social workers, who, in connection with their churches or charitable societies, constituted an important factor in the reclamation of many bad cases. The treatment at the clinic was medical, hydrotherapeutic, and suggestive, hypnotism being employed when possible. Cases presenting a true psychosis might be treated, as a last resort, in hospitals or sanatoria licensed to receive the insane. The most common forms of alcoholic phychoses in women were alcoholic deterioration, delusional insanity and hallucinosis, pseudoparesis, and Korsakoff's psychosis, and nearly all of these were curable. As to the frequency of inebriety in women, Dr. Atwood thought that outside of the large cities and the wealthy classes, there had been no increase, and he cited a number of statistics in support of this opinion. He then went on to say that on Randall's Island many of the idiots had an alcoholic heredity. It was estimated that only about ten per cent. of the children of hard drinkers were normal mentally and physically. Of children born of drunken mothers, more than half were still born or died in infancy, while a number of the survivors were mentally defective or epileptic, or else exhibited mental degeneracy later in life. A neuropathic heredity due to alcohol, it was estimated, was responsible for about two thirds of the criminal classes.

Dr. Arthur C. Brush said that the greater susceptibility of women to alcoholism was well known, and we did not have to go far to find the causes for this. One of the chief of these was the kind of education commonly employed for the sex. While boys were taught control, girls were allowed to give way to their emotions at any time. When, therefore, the temptation to indulge in drinking presented itself, women yielded more readily to it than men. In some cases alcoholism was a distinct disease. In men there was some chance of a cure, on account of their greater will power and determination, but he agreed with Dr. Hammond that such cases in women were never curable. In instances of dipsomania there was almost an epileptic impulse. In his opinion, it would be utterly impracticable to carry out in a great city like New York such a plan for prohibiting the sale of alcohol to inebriates as Dr. Lawrence had mentioned as being in effect in New South Wales. As to the responsibility of an alcoholic for his or her acts in law the same rule applied as in other conditions: as long as the person knew the nature and quality of his act, he was held responsible for it. The plan of having habitual drunkards committed to a special institution which had been proposed was open to the objection that the drunkard would still have the constitutional right to a trial by jury, which he could insist upon if so minded, and thus the end in view might perhaps be defeated. Still, a legislative enactment on these lines would undoubtedly be of great benefit. Delirium tremens, as Dr. Hammond had said, was less common in women than in men, but, on the other hand, multiple neuritis was much more common in female drinkers. Women were very apt to be secret drinkers and to keep the drinking up continuously. Many of them were accustomed to take constantly patent medicines containing alcohol, and he had personally known of three deaths due to the use of such a preparation. He agreed with Dr. Hammond also that no true paresis resulted from alcoholism. It was a question whether a woman had a more delicate nervous system than a man, for women certainly often showed themselves capable of sustaining great shock and severe nervous strain. It would seem to be in the lack of proper education in the way of restraining themselves that the greater danger to women lay, and the lesson to be learned from this was that more care should be given to training young girls to cultivate the same restraint which was enforced in the case of boys. At the present day there was unquestionably much more drinking among women in the upper classes than formerly, and this was largely due to the change that had taken place in their way of life. Large numbers now resided in hotels and apartment houses with restaurants, and, having no household cares to occupy their time, they gave way to an insane desire for pleasure. Luncheon and bridge parties, with cocktails and high balls, were largely responsible for the alcoholism now so frequently met with. This did not apply, however, to women of the lower classes, and among them the habit of drinking was now less common than formerly. Thus, at the Kings County Hospital, to which he was neurologist, there had been a distinct failing off of late years in the number of female alcoholic patients.

Dr. J. Herman Branth said that at a meeting of the Medical Society of the County of New York in 1901 he had read a paper on cleft palate and its connection with hare lip in which it was shown that such deformities were often found in the offspring of alcoholic parents. He referred to the conditions found in the cadaver of the alcoholic, particularly the softening of the muscles and the adipose tissue, and stated that in this class of persons a fracture of the thigh was almost certain to be followed by death. At the present time, he said, the Pennsylvania Railroad and other prominent railway companies would not place in a responsible position any one who was addicted to drinking.

Dr. William M. Leszynsky said it was generally recognized that it was more difficult to handle cases of inebriety in women than in men. In a patient of his of this character nothing seemed to have the slightest effect until she had to undergo laparotomy for an ovarian cyst. Since that time, now nearly fourteen years ago, she had not touched a drop of liquor. This case showed that sometimes a strong mental impression would accomplish what nothing else would do. In a case of multiple neuritis, in which the diagnosis was positive to his mind, for a long time it could not be ascertained that the woman was addicted to alcohol. Finally it came out, however, that for a number of years she had suffered from colic, and that for the relief of this she was accustomed to take large quantities of essence of peppermint, sometimes a tablespoonful every two hours for months together. There was quite enough alcohol in this to account fully for the condition present. Many women also were in the habit of taking considerable quantities of "Jamaica ginger," believing it to be harmless. From various other preparations women might innocently acquire the alcoholic habit. Thus, a few years ago there was on the market a strong malt extract known as "liquid bread," and he had known patients to be ordered by their physicians to take a bottle of this three times a day.

Letters to the Editor.

CHRONIC NASAL CATARRH.

Charleston, S. C., *October 10, 1910.*

To the Editor:

In your issue of July 24th you have awarded a prize for an article on The Treatment of Chronic Nasal Catarrh. I will not criticise the article *seriatim* for want of time and space, but in regard to the treatment of atrophic rhinitis it certainly falls far short of the most accepted present opinions as to the treatment of that condition. I quote the following from the article:

> *The atrophic form:* For the atrophic rhinitis the greatest relief obtained in the comparatively few cases I have observed was from a spray of a two per cent. silver nitrate solution, after a thorough cleansing of the entire cavity by persistent mopping with cotton applicators. The cleansing taxes one's ingenuity, but no treatment would give any relief unless the surfaces were first rendered perfectly clear of all crusts and secretion. These patients get comfort out of the home use of a stimulating oil, such as that before formulated, as a supplement to their cleansing sprays.
>
> I have never seen very marked improvement, other than the increased comfort, from any treatment of atrophic catarrh. Fortunately they are very few compared to the ordinary forms, and in these latter one can hold out very positive prognoses if the patient attends faithfully, interruptions in treatment bring disappointment to the patient, and therefore the irregular caller might better be turned away.
>
> On discharging the patient, it is well to remind him of the value of living up to his original programme and to suggest that he return after a couple of months for an inspection.

In order to cure atrophic rhinitis, it is necessary, first, to cleanse thoroughly the lateral sinuses, giving free outlet to all pus collections and inflammatory discharges. To accomplish this, the anterior end of the middle turbinates must be removed, and Lugol's solution of iodine should be applied continuously until the scabs cease to form. In order further to liquefy the nasal secretion and to prevent its coagulation, iodide of potassium must be administered in gradually increasing doses until the limit of toleration is reached. In this manner the scab formation in the nose can be abolished in every case, and the fœtor of breath will no longer be perceived.

W. Peyre Porcher, M. D.

RADIOGRAMS OF THE DIGESTIVE TRACT BY INFLATION WITH AIR.

173 Lexington Avenue,
New York, *October 8, 1910.*

To the Editor:

The highly interesting article under this title by Dr. Lewis Gregory Cole and Dr. Max Einhorn in to-day's issue of your esteemed journal contains a barbarism against which I wish to protest, because it is a dangerous one and must lead to confusion: By radiogram, as we learn from the context, the authors mean ray picture or Röntgen picture. *Ράδιος* (*α*, *ον*) means easy, pleasant, etc., and *γράμμα* is a line. Radiagramme or radiagram would be a pleasant line, an easy way or road; what the authors mean is *ἀκτινογράφημα* (actinographema) or *σκιαγράφημα* (skiagraphema). The word radiologist, intended to mean one who understands the Röntgen rays, is hybrid (*radius* (Latin) and *λόγος*). Ever since (in the year 1896) the word radiography was introduced I have protested against this barbarism, not anticipating at that time the confusion which we have now since Curie's discovery of radium. We read of radiotherapy, but can learn only from the context whether therapy by Röntgen rays or therapy by means of radium is meant. In a Berlin medical journal of recent date I suggested that we distinguish between Röntgen therapy and radium therapy.

A. Rose, M. D.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Transactions of the College of Physicians of Philadelphia. Third Series. Volume XXXI. Philadelphia: Printed for the College, 1909. Pp. 663.

The present volume of the *Transactions* contains the papers read before the college during the year 1909, an important year in the history of the institution, as the new hall was dedicated on November

10th and 11th of that year. The volume gives a review of this memorial event, which was fully reported in the *New York Medical Journal* of November 13, 1909.

A Textbook of Veterinary Anatomy. By Septimus Sisson, S. B., V. S., Professor of Comparative Anatomy in Ohio State University, Columbus, etc. With 588 Illustrations, Many in Colors. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 826. (Price, $7)

In this book the author gives the anatomy of the principal domestic animals, horse, ox, pig, and dog, to which is added in the chapter on splanchnology that of the digestive organs of the sheep. The book certainly fills a long felt want in our American literature on veterinary anatomy. It is a thoroughly scientific work. While it gives the anatomy and anatomical topography, it does not deal with embryology and histology. The author has also tried to bring order into the chaotic condition of the English nomenclature and favors the adoption of terms agreed upon by the congresses at Baden and Stuttgart, either in the original Latin or in Anglicized form. As a sort of transition stage he has used these terms exclusively or has added them in parenthesis. The book is well illustrated.

Hygiene and Public Health. By B. Arthur Whitelegge, C. B., M. D., B. Sc. Lond., F. R. C. P., D. P. H., Lecturer on Public Health, Charing Cross Hospital Medical School, etc., and George Newman, M. D., D. P. H., F. R. S. E., Lecturer on Public Health at St. Bartholomew's Hospital, etc. Illustrated. New York: Funk & Wagnalls, 1910. Pp. 650. (Price, $1.75.)

The amount of exact and useful information contained in this manual is entirely out of proportion to its small size, and although it was primarily written for English conditions, sanitarians the world over will derive much profit from a study of its pages. The book is divided into twenty-one chapters, which cover the entire field of public hygiene, and do it surprisingly well. The fact that it was written in 1908 accounts for the omission of so important a subject as that of typhoid carriers. That is probably the reason, also, why comparatively little emphasis is placed on the rôle of the infected individual as the main cause of the spread of infections. Certainly we are coming more and more to accept the latter view. We cordially recommend the book to all interested in public health, and that should mean all practising physicians.

Serums, Vaccines, and Toxines in Treatment and Diagnosis. By William Cecil Bosanquet, M. A., M. D. Oxon., F. R. C. P. Lond., Assistant Physician to the Charing Cross Hospital and to the Hospital for Consumption and Diseases of the Chest, Brompton, etc., and John W. H. Eyre, M. D., M. S. Dunelm, F. R. S. Edin., Bacteriologist to Guy's Hospital and in Charge of the Vaccine Department, etc. Illustrated. Second Edition. Thoroughly Revised. New York: Funk & Wagnalls Company, 1910. Pp. viii-362. (Price, $2.)

After a brief outline of the modern conceptions of immunity, the author presents an excellent review of the use of serums, vaccines, and toxines in the various infectious diseases. This practical portion of the book, which embraces 300 of the 365 pages, is admirably presented, and should prove of great value to practising physicians. Moreover, numerous references are given, so that it will be easy for any one to follow up the literature. The book may be cordially recommended. We hope that in a future edition the first twenty-five pages will be expanded to three or four times that number.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York. 1908-1909. By Professor A. Calmette, Professor W. G. MacCallum, Professor Graham Lusk, Professor W. Falta, Dr. John F. Anderson, Dr. M. J. Rosenau, Professor A. B. Macallum, Professor J. B. Leathes, Professor Philip Hanson Hiss, Jr., and Dr. C. B. Davenport. Philadelphia and London: J. B. Lippincott Company, 1910. Pp. 290.

It is always a pleasure to read these accounts recording the progress of medical science, for the lecturers are invariably high authorities in their respective fields. We could only wish, however, that the publication of the lectures could follow more closely after their delivery. Two years seems an unnecessarily long interval. The Harvey Society of New York deserves the thanks of the profession for the lectures thus far presented.

MEDICOLITERARY NOTES.

Good Housekeeping celebrates its silver anniversary with the October issue. Practical Victories of Medical Science, by Dr. Thomas Lathrop Stedman, is a popular history of a few things accomplished by the profession despite general indifference or worse. For More Brightness in the Home is a satirical article by Wallace Irwin, making fun of the efforts of young wives to make home attractive; Nathan Straus, in A Message to Housekeepers, tells of the advantages of pasteurized milk; The Child's Bill of Fare, by Dr. H. H. Hawxhurst, is not a criticism of the popular restaurants, but a useful list for mothers. It will be seen that medical lore has much to do with successful housekeeping.

* * *

We have stated that, much to our peace of mind, at least the nice looking orphans are quickly rescued from asylums and adopted by carefully selected guardians, and have wished that the plainer ones and the crippled could have the blessings and advantages of family life, which they would probably repay by manifesting mentalities greater than those of their more beautiful rivals. The October *Delineator* offers six children for adoption, but they are so charming in appearance that we need hardly worry over their future.

* * *

In the October *Everybody's*, The Poison Bugaboo, by Samuel Hopkins Adams, dissipates several superstitions of our boyhood and states very truly that the most dangerous poison bearing animal we have is the mosquito, too long merely a subject of careless joking on our part.

* * *

"A man of sixty may look like a skin of parchment stretched over knobs of wood. For Dr. Phinehas did so. He may have a polished pate, if he wear no peruke, and have no brows or lashes to his eyes, and his gold spectacles may seem to have been born with him; and yet there may be no need for him to crack his fingers as he speaks, nor to pinch his lips with superhuman shrewdness of speech ends, nor to cover his ear that can hear with his hand, and bring both within an inch of your mouth. Dr. Phinehas did all these things." Such is the physician of *An Affair of Dishonor*, William De Morgan's latest novel, its scenes laid in the time of Charles II. His methods of diagnosis and his speech will be found as curious as his mannerisms. The story, as might have been expected, will prove *entrainant*, but everybody hopes that De Morgan will soon return to Victorian London, to find more laughter compelling cockneys and adorable modern young women.

* * *

Seated on the piazza of his pleasant Flatbush cottage, The Mortgages, Dr. Ben Trovato recently remarked to us that cynicism was only 20/20, or normal, mental vision, which disclosed fine detail and hard outlines with cruel distinctness. "Astigmatism and sympathy are merciful afflictions," he concluded.

* * *

The recent domestic food show at the Madison Square Garden showed inexperience in the management. Despite the ample room afforded by the immense building, ticket speculators plied their trade outside, hoping to catch unwary strangers. Their presence was ludicrous to the initiated. The old hat and coat check game was worked just inside the door; it is well known that this privilege is farmed out to a company that covers most of the restaurants and other places of entertainment. Once safely by these annoying fakirs, that only New York puts up with, the visitor had much to see and learn.

* * *

It is disheartening to note the lack of powers of observation on the part of the average individual. The Food and Drugs Act requires the labeling of package goods with a plain statement of the ingredients, but the ordinary consumer never troubles himself to examine the labels, and pays out full prices for plum jam, for instance, without a trace of plum in it. At the food show there was a doll dressed in wool garments dyed solely in coloring matters extracted from proprietary foods, and quite gay she looked. Orange syrup, compounded of saccharin and aniline, without orange, is a sample of the exhibits. The army and navy were represented by superb cooking plants, and the respective chefs easily surpassed the average cook in bread making, etc.

* * *

One of the most delectable compounds exhibited at the food show was a proprietary "oil" that contained in the fluid ounce two thirds of a grain of opium, seven minims of sulphuric ether, and nine minims of chloroform, together with ninety-three per cent. of alcohol. It is intended for pain, external or internal, and should certainly control that symptom. This "oil" would appeal strongly to a dissipated Indian, and once he incurred the habit of drinking it, great difficulty would be experienced in satisfying his peculiar craving without knowledge of the foregoing formula. None of the reduction cures with which we are familiar seems to cover this possible case at all.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending October 14, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
Austria-Hungary—Hungary, general	Sept. 19-20	16	
Austria-Hungary—Vienna	Sept. 11-17	2	
Bari—Barletta, province	Sept. 18 24	6	4
Bari—Molfetta, province	Sept. 18-24	27	6
Bari—Triggiano, province	Sept. 18-24	1	
China—Dalny	Aug. 28-Sept. 3	1	
Foggia—Cerignola, province	Sept. 18-24	13	10
Foggia—Trinitapoli, province	Sept. 18-24	8	5
India—Bombay	Sept. 1-6		2
India—Calcutta	Aug. 14-20		12
Italy—General	Oct. 2-6	47	10
Italy—Naples	Oct. 2-6	47	11
Java—Batavia	Aug. 21-27	16	6
Morocco—General	Sept. 27		4
Persia—Erzeroum, vilayet	Aug. 22-Sept. 10	52	45
Russia—General	Sept. 4-23	36,490	14,059
Straits Settlements—Singapore	Aug. 14-27	7	5
Turkey in Asia—Trebizond	Sept. 10-16	7	1
Yellow Fever—Foreign.			
Brazil—Manaos	Sept. 4-10	1	1
Brazil—Para	Sept. 11-17	12	8
Ecuador—Babahoyo	Sept. 1-15	1	
Ecuador—Duran	Sept. 19		Present
Ecuador—Guayaquil	Sept. 1-15	1	
Ecuador—Milagro	Sept. 19		Present
Plague—Foreign.			
Brazil—Bahia	Aug. 6-19	3	3
China—Hongkong	Aug. 21-27	1	
Ecuador—Babahoyo	Sept. 1-15	1	
Ecuador—Guayaquil	Sept. 1-15	26	14
Ecuador—Matilde, plantation	Sept. 1-15	1	
India—Bombay	Sept. 1-6		17
India—Calcutta	Aug. 14-20		12
India—Rangoon	Aug. 21-27		7
Russia—Odessa	Sept. 10-16	8	5
Smallpox—United States.			
Alabama—Mobile	Sept. 25-Oct. 1	4	
Louisiana—New Orleans	Sept. 25-Oct. 1	4	
Mississippi—Marshall County	Sept. 25-Oct. 1	1	
Mississippi—Yazoo City	Sept. 25-Oct. 1	1	
Nebraska—Lincoln	July 1-31	1	
North Carolina—General	July 1-31	115	
Ohio—Franklin County	Sept. 1-30	2	
Ohio—Hamilton County	Sept. 1-30	1	
Ohio—Jackson County	Sept. 1-30	3	
Ohio—Lucas County	Sept. 1-30	1	
Ohio—Ross County	Sept. 1-30	1	
Pennsylvania—Entire State	July 1-31	23	1
Pennsylvania—Entire State	Aug. 1-31	4	
Smallpox—Foreign.			
Brazil—Bahia	Aug. 6-19	36	27
Brazil—Para	Sept. 11-17	7	
Brazil—Rio de Janeiro	Aug. 29-Sept. 4	6	
Canada—Dauphin	Sept. 15		Present
Canada—Victoria	Sept. 18-24	1	
Ceylon—Colombo	Aug. 21-27	1	
China—Shanghai	Aug. 29-Sept. 4		2
Gibraltar	Sept. 19-25	1	
Great Britain—Liverpool	Sept. 18-24	1	
India—Bombay	Sept. 1-6		1
India—Calcutta	Aug. 14-20		1
India—Rangoon	Aug. 21-27		1
Japan—Formosa	Aug. 28-Sept. 3		1
Java—Batavia	Aug. 21-27	1	
Mexico—San Luis Potosi	Sept. 4-10	1	1
Portugal—Lisbon	Sept. 11-17	53	
Russia—Moscow	Sept. 4-10	3	1
Russia—Odessa	Sept. 4-10	1	
Russia—Riga	Sept. 11-17	4	
Russia—St. Petersburg	Sept. 4-10	14	5
Russia—Warsaw	June 26-July 30		26
Straits Settlements—Singapore	Aug. 14-27	39	11
Switzerland—Zurich, canton	Sept. 11-17	1	
Uruguay—Montevideo	July 1-31	90	43

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending October 12, 1910:

ALFORD, NEIL, Acting Assistant Surgeon. Granted thirty days' extension of leave of absence from August 29, 1910, on account of sickness, and fourteen days' annual leave from September 28, 1910.

Barclay, James, Acting Assistant Surgeon. Granted thirteen days' leave of absence from October 10, 1910.

Bingham, E. O., Acting Assistant Surgeon. Granted fifteen days' leave of absence from October 15, 1910.

Francis, Edward, Passed Assistant Surgeon. Granted thirty days' leave of absence from October 3, 1910.

Goldthwaite, Henry, Acting Assistant Surgeon. Granted seven days' leave of absence from October 6, 1910.

Lumsden, L. L., Passed Assistant Surgeon. Directed to proceed to Huntsville, Ala., on special temporary duty.

McClintic, T. B., Passed Assistant Surgeon. Granted fourteen days' leave of absence from October 5, 1910.

McLaughlin, A. J., Passed Assistant Surgeon. Directed to proceed to Chicago, Ill., upon special temporary duty.

Rucker, W. C., Passed Assistant Surgeon. Directed to proceed to Baltimore, Md., upon special temporary duty.

Scott, E. B., Pharmacist. Granted twenty-three days' leave of absence from October 17, 1910.

Spratt, R. D., Passed Assistant Surgeon. Granted four days' leave of absence from September 28, 1910, on account of sickness.

Wickes, H. W., Surgeon. Directed to proceed to New Orleans (Quarantine) La., upon special temporary duty.

Board Convened.

Board of medical officers convened to meet at Stapleton, N. Y., October 18, 1910, for the purpose of making a physical examination of a cadet of the United States Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon W. A. Korn, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 15, 1910:

Bowman, M. H., Lieutenant, Medical Reserve Corps. Granted leave of absence for two months and twenty-four days to take effect about October 15th.

Carter, Henry P., Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States, and to the Army Medical School for a course of instruction.

Eastman, William R., Captain, Medical Corps. Granted leave of absence to include November 5, 1910, on account of sickness.

Gantt, Robert H., Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States and to the Army Medical School for a course of instruction.

Heflebower, Roy C., Lieutenant, Medical Corps. Will proceed to Fort Totten, N. Y., about October 19th, for temporary duty during the absence of Major Charles Willcox.

Moncrief, William H., Captain, Medical Corps. Granted leave of absence for one month with permission to visit China and Japan.

Ragan, Charles A., Captain, Medical Corps. Ordered to the Walter Reed General Hospital, District of Columbia, for observation and treatment.

Roberts, William M., Major, Medical Corps. Leave of absence granted in S. O. 140, June 16, 1910, extended one month.

Slater, Ernest F., Lieutenant, Medical Reserve Corps. Paragraph 27, Special Orders 244, September 24, 1910. W. D., announcing his honorable discharge from the service of the United States on October 13, 1910, suspended for the present.

Straub, Paul F., Major, Medical Corps. Granted leave of absence for one month and fifteen days about November 1st.

Strong, Francis X., Lieutenant, Medical Reserve Corps. Ordered to active duty in the service of the United States and to the Army Medical School for a course of instruction.

Wiggin, D. C., Lieutenant, Medical Reserve Corps. Resignation accepted by the President, to take effect November 1, 1910.

Williamson, L. P., Lieutenant, Medical Corps. Ordered to Fort D. A. Russell, Wyoming, for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 15, 1910:

Eaton, W. E., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

Furnell, C. B., Pharmacist. Detached from the Naval Hospital, Annapolis, Md., and ordered to temporary duty at the naval hospital, navy yard, Washington, D. C.

Halsey, W. H., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

Halton, E. P., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

Howard, J. V., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

Jacoby, A. L., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

May, H. A., Passed Assistant Surgeon. Detached from the naval hospital, Mare Island, Cal., and ordered to the bureau of medicine and surgery, Navy Department, temporarily.

Morris, L., Surgeon. Detached from the *Georgia* and directed to await orders.

Omelvena, J. G., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

Pratt, L. L., Assistant Surgeon. Commissioned an assistant surgeon from October 1, 1910.

Stuart, D. D. V., Jr., Assistant Surgeon. Commissioned an assistant surgeon from October 5, 1910.

Wise, J. C., Medical Director. Transferred to the retired list from October 7, 1910.

Births, Marriages, and Deaths.

Died.

Bauer.—In Akron, Ohio, on Wednesday, October 5th, Dr. Frederick J. Bauer, aged fifty-six years.

Beauchamp.—In Russellville, Kentucky, on Monday, October 10th, Dr. Richard N. Beauchamp, aged eighty-six years.

Burt.—In Philadelphia, on Saturday, September 24th, Dr. N. H. Burt, of Ocean City, New Jersey, aged fifty-one years.

Carey.—In Indianapolis, Indiana, on Tuesday, October 11th, Dr. George A. E. Carey, aged seventy-seven years.

Cook.—In Mexia, Texas, on Saturday, October 1st, Dr. John P. Cook, aged sixty-six years.

Dismant.—In Limerick, Pennsylvania, on Tuesday, October 11th, Dr. Benjamin Franklin Dismant, aged sixty-five years.

Hamilton.—In Lafayette, Louisiana, on Saturday, October 8th, Dr. W. W. Hamilton, of Meridian, Mississippi, aged fifty-two years.

Heavrin.—In Hawesville, Kentucky, on Friday, September 30th, Dr. J. H. Heavrin, aged forty-eight years.

Hill.—In Syracuse, New York, on Tuesday, October 11th, Dr. Charles E. Hill, aged eighty-five years.

Jameson.—In Indianapolis, Indiana, on Friday, October 7th, Dr. Patrick Henry Jameson, aged eighty-six years.

Little.—In Tamaqua, Pennsylvania, on Monday October 3d, Dr. George Little, aged forty-eight years.

O'Bannon.—In Elizaville, Kentucky, on Friday, October 7th, Dr. Andrew J. O'Bannon, aged sixty-nine years.

Olhausen.—In Harrisonburg, Virginia, on Saturday, October 8th, Dr. Frank Blair Olhausen, aged thirty-four years.

Shoemaker.—In Philadelphia, on Tuesday, October 11th, Dr. John V. Shoemaker, aged fifty-eight years.

Simmons.—In Sacramento, California, on Tuesday, October 4th, Dr. G. L. Simmons, aged seventy-eight years.

Taylor.—In Pittsburgh, Pennsylvania, on Wednesday, October 12th, Dr. H. W. Taylor, aged thirty-nine years.

Willard.—In Lansdowne, Pennsylvania, on Saturday, October 15th, Dr. De Forest Willard, aged sixty-four years.

Woodbury.—In Chicago, on Thursday, October 6th, Dr. William H. Woodbury, aged eighty-five years.

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Original Communications.

REPORT OF TWO CASES OF REVOLVER SHOT WOUND OF THE BRAIN:

Successful Removal of the Bullets in Each Case.

By John Chalmers DaCosta, M. D.,
Philadelphia.
Samuel D. Gross Professor of Surgery in Jefferson Medical College.

All surgeons know that there are upon record a number of cases of individuals who have carried for long periods and without symptoms bullets lodged within the cranium. In some of these cases it is certain that the ball was lodged in the brain. For instance the elder Gross speaks of an officer, wounded at the battle of Wagram, who "died many years after, at an advanced age." After his death "the ball was found in the left lobe of the cerebellum." (*A System of Surgery* by Samuel D. Gross, ii, p. 73.) Anel reported a similar case, and like cases are to be found in literature. In many of the cases, even in those in which it was known that the brain had been wounded, it was impossible to ascertain where the ball was lodged, and hence, it could not be proved that it was lodged in the brain. When we reflect that most of these reports were made before the discovery of the Röntgen rays, it is a justifiable inference that in many of them the bullet though within the skull was not imbedded in the brain or resting on the cortex. A bullet on the cortex or in the brain, will sooner or later, in the greater majority of instances, do dreadful harm. In most cases it does harm very soon, in some few cases after a considerable period or a long time. Gibson, of Nashville, reported the case of a man who carried a lodged, quiescent bullet in the frontal lobe for six years when fatal inflammation arose. Camden's patient lived for thirteen years, then an abscess developed, and the man died. S. W. Gross reported the case of a man who carried a one ounce bullet in his cerebellum. He was entirely free from symptoms for six months, when he died of suppuration about the ball.

The lead pistol bullet is septic. If the patient does not die quickly of shock or hæmorrhage, the bullet, if allowed to remain, will usually soon induce septic leptomeningitis, encephalitis, thrombosis, or abscess. It may be responsible for some such complication at a much later period. Even if the patient escapes septic complications and the bullet becomes encysted it will sooner or later, in almost all cases, cause irritation or destruction of brain matter, and be responsible for death after a prelude of epilepsy, paralysis, amnesia, deafness, blindness, cerebral softening, or insanity.

Therefore, though I admit that a man may carry a bullet in his brain for a long period without apparent harm, I believe such cases to be very rare, and regard a lodged ball as practically always a deadly menace. A lodged ball will almost certainly some day, and probably very soon, cause grave disaster and eventually kill the victim; hence, if at all possible, it should be removed.

When a bullet is lodged within the cranium and the patient was wounded days, weeks, or months before, we must determine: 1. The exact situation of the lodged bullet, and if it can be reached and removed surgically; 2, the course of the bullet from the wound of entrance to the point of lodgment; 3, what symptoms, if any, are present; 4, which symptoms are due to the lodged bullet, which symptoms depend upon the damage which was inflicted by the bullet tearing a way to its point of lodgment, and which symptoms are manifestations of lesions which have arisen in the track of the ball. A study of these four points will guide us to the advisability and the possibility of an operation.

A bullet can be certainly skiagraphed and so can fragments torn from the bullet and fragments of bone (and even powder grains), which are apt to be in the track of the ball and be driven into the brain about the track.

The Röntgen rays enable us to be certain as to the situation of the bullet. Dr. Manges, of the Jefferson Hospital, locates bullets with a modified Mackenzie-Davidson localizer. This apparatus is made entirely of metal, can be applied to the head during the operation, and used to indicate the depth of the ball from a chosen point on the surface without the necessity of mathematical calculations.

When we have determined the relation of the bullet to some point on the surface of the skull and its depth from the surface we endeavor to decide if it is in the brain, on the cortex, or outside of the dura. If it is in the brain we estimate the depth at which it lies and determine if it is near a vital centre. If it is on the brain we decide if it is on or near a cortical centre and if so which one. We then study out whether the ball can be removed without certainly causing death and without inflicting irreparable damage upon the brain with consequent incurable impairment of some important function. The course of the bullet from its point of entrance to its seat of lodgment must be carefully estimated in order to get a clear idea of the damage inflicted by the moving projectile. In

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cases in which deflection occurred within the skull it is always difficult and usually impossible to map out the course of the ball. A study of the symptoms, their combination, their mode of origin, and their time of onset may give great help in determining the exact situation of a bullet in the brain and the damage it inflicted in tearing its way through the brain.

It is always to be remembered that symptoms may be due to the lodged ball; to the wound it tore in the brain; to bits of lead, bone, or powder in the wound tract, or to lesions arising about the bullet or in or about the bullet track. The determination of the existence of accessible foreign bodies in the track of the ball is often of the greatest importance for they may demand removal as much as does the bullet.

Having decided that a bullet is accessible we study out how it may be reached most easily, most safely, and with the least injury to function. In some cases it is best reached by following the course of the ball from the entrance wound, in others from the opposite side, in some cases from the front, in others posteriorly.

I have already stated that a lodged bullet may not cause symptoms. It may not be responsible even when symptoms of encephalic trouble exist, as the symptoms may be due to damage already inflicted and the imbedded missile may for the time be unproductive of a single symptom. We must never entertain any hope that removal of a lodged ball can have the slightest influence in abolishing symptoms which result from the destruction which was caused by the moving ball. For instance, it is obvious that if a bullet destroyed the optic commissure and then lodged, removal of the bullet could not restore sight.

Practically every lodged bullet constitutes a fatal condition and it should be removed, if possible, even if there are no symptoms. As a general proposition, in most cases, the harm done by retention is greater than the damage inflicted by a skilled brain operator in accomplishing removal. Removal is even more our duty when the bullet is near a vital centre. When serious symptoms exist even grave operative risks do not forbid interference. Of course in some cases operation cannot be attempted because it would obviously be fatal. In some cases, without symptoms, in which we are sure that operation would produce a functional calamity, we do not operate. In all other cases operation is advised, if the bullet is in an accessible region.

I believe that the old conservative view of *laissez faire* is an error. It is founded upon a misconception as to the harmlessness of encysted bullets and undue faith in the many cases reported before the days of the x rays. In cases of lodged bullets radical surgery is usually the safest and the wisest.

In this paper I report two cases of lodged revolver bullets. In each case the bullet was in the brain. In each case it was successfully removed long after the injury. (In one case after six weeks, in the other after eight months.)

Case I. (No. .22 bullet lodged in the brain for eight months. Produced amnesia and convulsions. Successfully removed. Convulsions arrested but amnesia not improved.)

Henry G., white, aged fifty-eight, blacksmith, referred to Jefferson Hospital by Dr. Jackson, then of Philadelphia, admitted September 25, 1907.

The patient could give no history. The family seemed reluctant to impart any information and regarded inquiries as evidence of impertinent curiosity regarding their private affairs. Hence the history obtained was fragmentary. It was learned that for some time before the shooting he had been much depressed mentally and had been unable to work, and that on January 13, 1907, during a period of great despondence, he had shot himself in the head. The weapon used was a revolver of .22 calibre. He shot himself on the right side of the head, above and behind the ear. Before the injury he had never had a "fit" and his memory had been excellent. He was unconscious for "some time" after the shooting. He was removed to a hospital where he remained for three weeks. On coming out of the hospital it was observed that his memory was "very bad." It did not improve with time. A few weeks after his discharge from the hospital he began to have convulsions with unconsciousness. The "fits" were at irregular intervals, were said to have been general and without any signal symptoms. After each convulsion he remained unconscious for a few minutes, and then for several hours was excited and incoordinate. During the months before he was brought to the Jefferson Hospital he had seven or eight convulsions a week and the family brought him to us because of the increasing frequency of the convulsions.

On reaching the hospital x ray pictures were taken and the man was brought at once into my clinic, where I made an examination before the class, having no thought then that I should be obliged to operate in haste and expecting to have ample time in which to study the case carefully.

The incomplete history, as reported, was obtained. The wound of entrance of the bullet was observed to be healed. There was no wound of exit and evidently the bullet was lodged. The wound was on the right side of the head at the junction of a horizontal line drawn backward from the roof of the orbit and a vertical line from the posterior portion of the mastoid process. The patient was slow and dull mentally, conversed slowly but used words correctly and spoke clearly; he was able to write correctly. The loss of memory was perfectly obvious. It was like the loss of memory in the aged. He forgot recent events and events just before the injury; he remembered old events, although he seemed to recall them slowly and often with effort. He did not remember the shooting or the causes which instigated it. It was found that he did not know when he came into the hospital, how long he had been there, when he had left home, the day of the week or the month of the year. He knew the names and uses of objects. In a minute or two he forgot anything that had been said to him or asked of him. His powers of registration were greatly lessened, hence the amnesia to recent events.

The bladder and rectum were undisturbed. The pulse and temperature were normal. There were no tongue tremors. The reflexes, deep and superficial, were unaffected. There were no obvious sensory changes, and there was no palsy. There was no evidence of auditory or visual defect, but the optic discs had not as yet been examined The amnesia was not senile, the man was but fifty-eight. the memory had been excellent until the accident, and the trouble arose with the shooting. It was not due to melancholia. Melancholia, except the agitated form, seldom causes marked loss of memory, and then only when the depression has been profound and has lasted a long while. It was not due to convulsions or to drugs given for the convulsions, as loss of memory preceded convulsions. It was evidently due to the shock of the injury and was to some degree retroactive as the causative injury and events for a certain time before the injury could not be recalled. This form of partial amnesia is common after head injuries.

The patient was sent to the ward for further study. The x ray report of Dr. Manges was as follows:

Plates were made in transverse and anteroposterior views. It was thus determined that the bullet had crossed the brain and lay to the left of the median line in the posterior portion of the skull. It was assumed that when operation for removal should be performed the field of operation would be somewhere on the left lateral and posterior aspect of the skull. For the purpose of localization

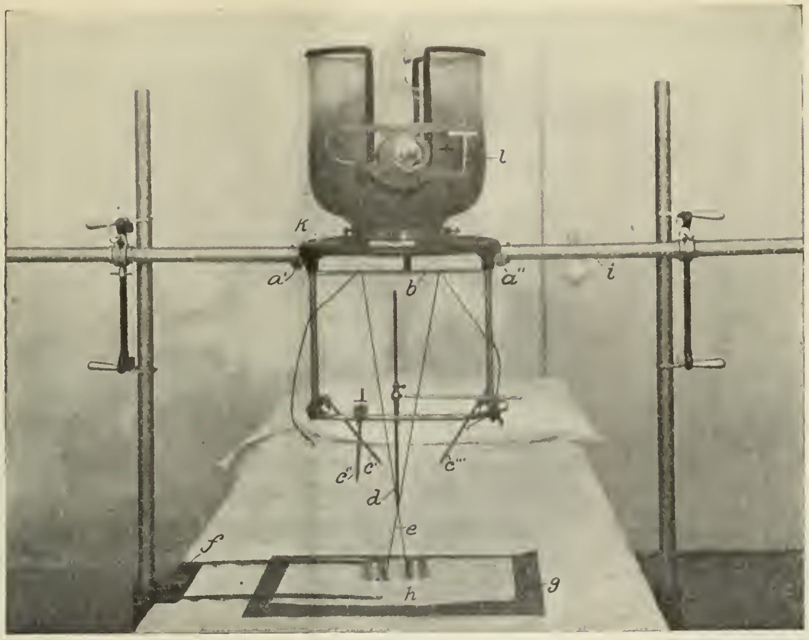

FIG. 1.—Modified Mackenzie-Davidson localizer used in the localizations.

the patient was placed on the x ray table in about the position he would have to occupy during surgical operation, that is, the field for operation was uppermost, and the McKenzie-Davidson localizer was used. It was found that the bullet was on or near the surface of the brain as it was only at a depth of three quarters of an inch from the scalp. A mark was made on the scalp at this point.

A few hours after the man had been in the clinic room he began to have convulsions. He went from one convulsion into another without any intervening period of consciousness, in other words the status epilepticus developed. I saw him late that night. The convulsions were clonic and general. In the course of a few hours he had over forty fits. All the time some of his muscles, now his hands, now his legs, were in exaggerated tremors. The pulse was 120 and the temperature 101° F. The urine was normal.

I immediately trephined at the point indicated by Dr. Manges as overlying the bullet. On opening the dura there was no sign of the bullet. The cortex of the parietal lobe was incised and just beneath it a cavity, the size of a marble, was entered. In this cavity there was considerable fresh blood and in it lay the bullet. The walls of the cavity were thick and smooth except at one point. The bullet was unattached and moved freely at the slightest touch. The incised brain and the rough point on the cavity wall oozed considerable blood. The bullet was removed and the cavity irrigated with salt solution. A piece of gauze was introduced to control bleeding and to secure draining, and the dura and scalp were sutured.

He regained consciousness a few hours after the operation, no convulsions took place from that time, and he made a rapid operative recovery. I kept track of him for a number of weeks after the operation. He had no convulsions but his memory was not improved. I have lost sight of the patient and do not know what his subsequent history has been or if he is still living.

In this patient the shock caused partial amnesia, the bullet, encysted just beneath the cortex, caused convulsions, and in all probability when the tearing loose of the bullet from the wall which encysted it took place, the bullet moved about and the irritation led to the development of the status epilepticus. An interesting fact is that a No. .22 bullet should have pierced an ordinarily thick skull and reached the opposite side of the head.

CASE II. (Bullet of .32 calibre lodged in the brain for over four weeks, caused violent headache and was successfully removed with complete recovery.)

The patient was A. W., male, white, aged thirty, policeman, referred by Dr. Taggart, of Atlantic City. Admitted January 26, 1910, for a lodged bullet in the brain. For some months before his injury he had labored under melancholic depression with suicidal tendencies. On December 22, 1909, he shot himself in the head, using a revolver of .32 calibre. He was taken at once to the Atlantic City Hospital. The skull was trephined and "violent" hæmorrhage beneath the dura was arrested. The bullet was not removed. On January 16, 1910, the patient was discharged from the hospital. Ever since he "awoke" after the injury and operation he complained of "horrible" pain in the head.

Examination:—Well developed and fairly well nourished man, complexion sallow; attitude listless; movements sluggish. Face was heavy, dull, and depressed, and showed the lines of pain. He spoke with some hesitation, but clearly and accurately. He was a little slow of comprehension, power of attention was somewhat impaired. He was much depressed mentally, but exhibited no delusions. No tongue tremors. His memory was accurate but slow. He remembered the shooting, events just before it, and recent events. Would not discuss or explain the act of attempted suicide. His condition of mental dulness was apparently that often seen in one recovering from melancholia. Over the right temporal region there was the scar of an operation and the sinus of a bullet wound, and from the sinus a little serosanguinolent fluid dripped. The scar was tender.

Dr. Hansell examined the eyes and reported as follows:—Ocular movements unimpaired and media clear. Pupils large, reacting normally to light and accommoda-

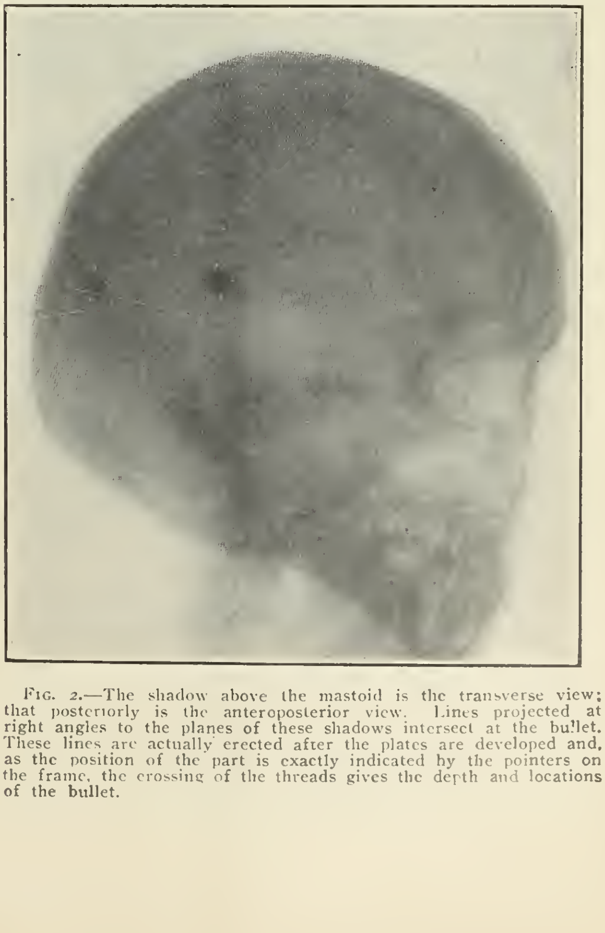

FIG. 2.—The shadow above the mastoid is the transverse view; that posteriorly is the anteroposterior view. Lines projected at right angles to the planes of these shadows intersect at the bullet. These lines are actually erected after the plates are developed and, as the position of the part is exactly indicated by the pointers on the frame, the crossing of the threads gives the depth and locations of the bullet.

tion. No external ophthalmoplegia. Slight nystagmoid movements on forced lateral examination. Optic discs normal. Dr. S. MacCuen Smith examined the ears and found the hearing normal. Taste and smell unimpaired. Dr. Dercum reported no Babinski reflex, no ankle clonus, no paradoxical reflex, no Oppenheim reflex, superficial reflexes preserved. The knee jerk and Achilles tendon reflex increased on both sides. No observed sensory abnormality. Stereognosis preserved. Bladder and rectum normal. There were complaints of horrible headache, which was general but worst in the occipital region, and when patient stood erect; greatly aggravated by tapping the head anywhere or by making any movement; but relieved somewhat by lying down and keeping quiet; the pain kept him awake. The urine normal except for rather low specific gravity, 1.008; passed about fifty ounces a day.

Blood report: 9,400 leucocytes; 4,300,000 erythrocytes; eighty-one per cent. hæmoglobin.

Dr. Manges made the x ray examination. He determined by stereoscopic skiagraphs that the bullet lay in or almost in the median line of the skull and at a depth of over two inches from where the sagittal suture joins the lambdoidal suture.

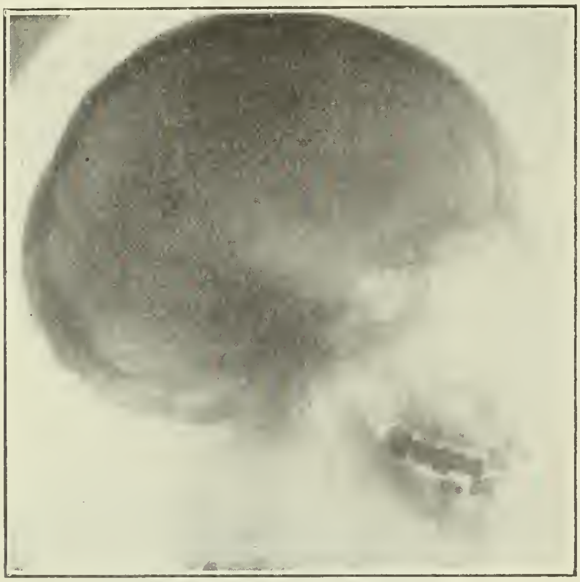

Fig. 3.—This picture shows simply the shadows of the transverse view. As the bullet was located practically in the median line the shadows of the anteroposterior view would not show in this section. The small dark spot is a fragment of the bullet probably lodged in the petrous part of the temporal bone. The irregular dark spot above the middle of the zygoma shows point of entrance of bullet.

Because of the depth at which this bullet lay the localizing apparatus was taken into the operating room, sterilized, and used as a guide just before opening the skull.

On February 6 the patient was anæsthetized. It was determined to seek for this bullet by way of the longitudinal fissure and not by incising the brain along the track of the ball. An osteoplastic flap was made by the method of Cushing. The base of the flap was over the occiput. The dura was opened, and the brain appeared normal. The right hemisphere was retracted outward. I passed my finger along the falx cerebri in the median fissure and at a depth of over two inches felt the missile. The bullet was lodged in the falx and against the superior surface of the straight sinus. The whirr of the blood in that sinus was very distinct as the finger pushed against the bullet. The falx was incised, the bullet was exposed and removed with bullet forceps. On its removal there was a great gush of blood, presumably from the sinus. The bleeding was arrested by gauze packing which made much pressure on the falx and tentorium. Because of the large amount of gauze employed, the fear of further hæmorrhage, and the apprehension as to the results of compression, the bone flap was removed and the scalp sutured about the protruding gauze.

He reacted quickly from the ether and a few hours after the operation was perfectly conscious and free from pain. The packing was not removed for nine days. On its removal there was no bleeding.

The patient was sent home February 25 feeling well and cheerful, entirely free from pain, and with the wound nearly healed. At present he is in excellent health and is working as a stevedore.

In this case the melancholia was improving when I operated and was completely recovered from soon after the operation.

Entering the longitudinal fissure to reach the bullet saved injury to the brain which would have proved most disastrous had any attempt been made to follow the track of the ball through the right hemisphere to the falx.

The lodgment in the falx explains the violent headache.

An interesting postoperative phenomenon was an enormous increase in the amount of urine. The day after the operation 7300 c. c. were passed. The eighth day after the operation 4600 c. c. were passed. It was judged that the pressure of the gauze was responsible for this. On removal of the gauze the amount dropped during the subsequent twenty-four hours to 2750 c. c., and gradually the daily output became normal. The daily urine was carefully estimated by Dr. Rumbaugh, to whom I am greatly indebted for the skillful and unremitting care he gave this patient.

Irritation of the medulla may cause polyuria and perhaps this is the explanation of its occurrence in this case. At times the urine showed a trace of albumin but never sugar, acteone, a diacetic acid.

DEMONSTRATION OF A SIMPLIFIED TECHNIQUE FOR X RAY LOCALIZATION OF BULLETS IN THE THICKER PORTIONS OF THE BODY.*

By Sinclair Tousey, A. M., M. D.,
New York.

Cases like that of President McKinley and of the patient who is to be described in this article are sometimes beyond the reach of ordinary surgical means of exploration. The Röntgen ray furnishes exact information as to the position of the bullet without a difficult and dangerous operation. The question of removal may then be decided. The bullet may be shown to lie in such a position that in the absence of infection it is not a probable source of danger while its removal amounts to a major operation which the surgeon may not feel justified in insisting upon. Or, on the contrary, the position of the bullet may in itself be a cause of danger; or threatening symptoms may call for its removal guided by the x ray picture.

Bullets in the thicker parts of the body are more difficult to localize than those lodged in the limbs. In the latter, the fluoroscope often shows the bullet; and the forceps may be watched as it is thrust through the tissues until it seizes the bullet. In one case a bullet flatened out upon the femur was removed by the author in this way. Other bullets in the limbs may be located with the fluoroscope and marked for subsequent removal in cases where it is not practicable to use the x ray at the operating table. This is done by looking through the limb from before backward, and fastening a bit of lead upon the front of the limb in a direct line with the bullet and another upon the back of the limb. Looking at the limb from side to side enables one to apply similar marks at either side. Two lines are marked in this way and the bullet is known to lie at their intersection.

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*Read before the Richmond Section of the Medical Association of the Greater City of New York, June 6, 1910.

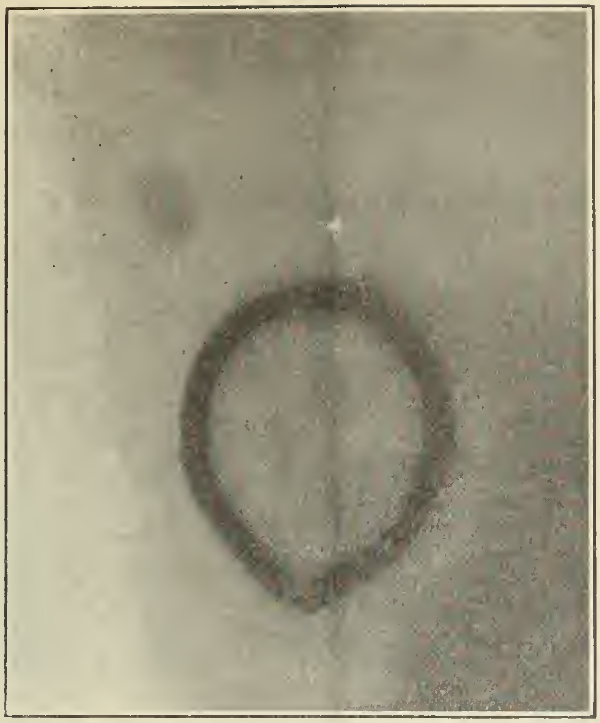

FIG. 1.—Radiograph of bullet in acetabular region. Actual size of bullet and its relation to a localizing lead ring fastened to the skin. This is part of a large radiograph which showed also the ilium and femur.

Then again in the case of a bullet lodged in one of the limbs two radiographs may be made, one anteroposteriorly and another laterally, which will furnish all the necessary information as to location.

A bullet lodged in the thicker portions of the body, however, presents greater difficulty. It is often impossible to see it with the fluoroscope, especially if the examination is made with a portable apparatus instead of at an x ray laboratory equipped with powerful apparatus. Even if the bullet can be seen it is seldom safe to simply thrust the forceps through the tissues under the guidance of the fluoroscope. There are too many vital organs in the way. A radiograph made in an anteroposterior direction will show the bullet and its relation to certain bony landmarks, but it is seldom possible to secure a good radiograph with the x ray tube placed at the side of the body. The method that must be adopted in the great majority of cases consists in making a radiograph upon a plate placed behind the body and then shifting the x ray tube a certain distance and making a second picture.

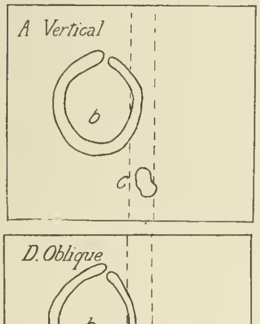

FIG. 2.—Displacement of the image of the bullet *c* with reference to that of the metal ring *b*. In *A* the x ray tube was vertically above the metal ring, while in *D* the x ray tube had been shifted five inches to the outer side.

The McKenzie-Davidson localizer is an apparatus for studying the plate after it has been developed. The plate is laid upon a table above which are two guides in the two positions occupied by the platinum disk of the x ray tube, while the two exposures were made. A string is fastened to one of these guides and to a little weight placed upon the corresponding image of the bullet. The intersection of this string with another passing from the second position of the platinum disk to its image of the bullet shows the exact position of the bullet with reference to the plate when the two radiographs were being made.

The author's method is illustrated in the following case, to which I was called by Dr. Archer Jagger, of Flushing, N. Y.

A steel jacketed rifle bullet had struck the patient, a boy eleven years old, in the left lower part of the abdomen. An operation had been performed at the Flushing Hospital which showed that the abdominal cavity had not been perforated, but which did not discover the location of the bullet. With a portable x ray outfit in the brilliant daylight of the operating room, the bullet could not be seen on fluoroscopic examination. A ring of wire solder was fastened upon the skin by adhesive plaster at a point directly under the supposed position of the bullet, as the boy lay upon his back on the operating table. A radiograph, Fig. 1, was then made with the anticathode of the x ray tube vertically above the metal ring and at a distance

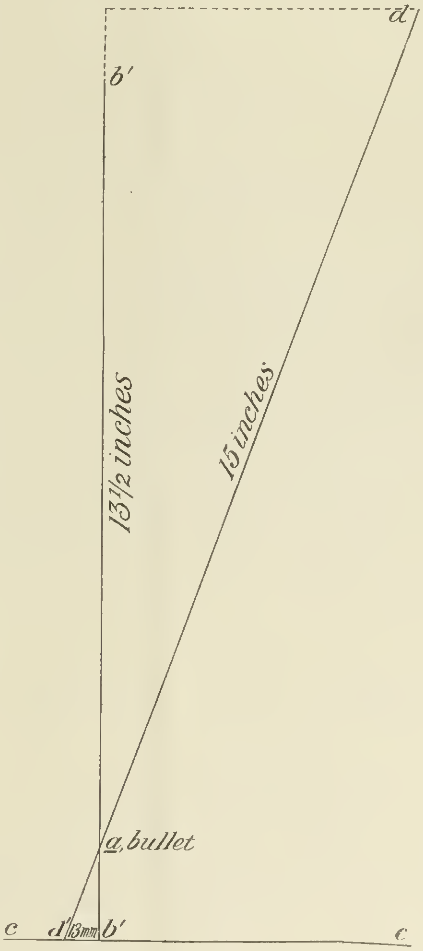

FIG. 3.—Reduced from a diagram measuring the distance of the bullet from the surface of the radiographic plate. *b*, First position of the x ray tube and *b'* the corresponding image of the bullet. *d*, Second position of the x ray tube and *d'* corresponding image of the bullet, 13 mm. from *b'*. *a*, Location of the bullet at the intersection of the lines representing the paths of the rays in making the two radiograph.

of 13½ inches from the photographic plate with which the metal ring was in close contact. The plate was removed and another put in its place without changing the boy's position. It was not necessary that the second plate should occupy exactly the same position as the first one, so no special plate holder was required. Before making a radiograph upon the second plate, the x ray tube was shifted toward the outer side five inches and raised so that the anticathode was fifteen inches above the level of the photographic plate. Instructions were given that the metal ring was to be left fastened upon the skin until after the radiographs had been developed and the bullet located.

The radiograph made with the tube vertically over the metal ring was compared with the second radiograph and it was found that in the latter the shadow of the bullet had been displaced 13 mm. toward the inner margin of the ring. Fig. 2 is a tracing of this portion of the two plates, showing the displaced image of the bullet. A full sized diagram of which Fig. 3 is a reduced copy was drawn upon a sheet of paper two feet square. The horizontal line represented the plane of the photographic plate. The top of the vertical line was 13½ inches above the horizontal line and represented the position of the anticathode when the first picture was made, and the foot of this line represented the image of the bullet in the first radiograph. The position of the anticathode of the x ray tube in making the second radiograph, was shown by measuring five inches outward from the first position and fifteen inches upward from the horizontal line. The shadow of the bullet in the second picture was shown by measuring thirteen mm. along the horizontal line inward from the first position. A line was then drawn from the second position of the anticathode to the second shadow of the bullet. The true position of the bullet was at the intersection of this line with the vertical line. The distance from this point to the horizontal line was measured with a ruler and found to be 1½ inch. This measurement combined with the anatomical relations shown in the radiograph located the bullet in the muscular mass above the great trochanter of the femur and external to the ilium and below the crest of the latter and 1½ inch from the posterior surface as the boy lay supine. It lay in a line close to the outer margin, and about ½ inch below the lower margin of the metal ring.

The metal ring remains fastened upon the skin as a most important landmark until the bullet has been removed or, as in the case just described, the patient or his guardian has decided to leave the bullet *in situ*.

140 West Fifty-seventh Street.

A SCIENTIFIC INTERPRETATION OF KUATSU, OR THE JAPANESE METHOD OF RESTORING LIFE.

By Albert Abrams, A. M., M. D.,
San Francisco, Cal.

Kuatsu, or the restoration of life, is an integral part of jiu jitsu. The latter is usually regarded wholly as a means of physical training and as a method of combat, but when the victim is "knocked out," recourse is had by adepts to definite methods of resuscitation known as kuatsu.

Many centuries ago, when jiu jitsu was primarily conceived in Japan, kuatsu was used for reviving individuals who were rendered unconscious by the various systems of jiu jitsu, but later it was shown that kuatsu was equally effective in instances of sunstroke, drowning, and injuries from other causes.

It is stated that the adept in jiu jitsu inflicts no injury that cannot be promptly remedied by the aid of kuatsu, whereas our pugilists may inflict blows which may render their opponents unconscious and yet are unable to do anything to revive them. The captious critics of kuatsu seek to dispose of the supposed exaggerated claims of the latter by the derisive observation that the jiu jitsu man is able to restore those whom he kills.

The line of demarcation betwen life and death is difficult of determination and an individual should, paradoxical as it may appear, only be regarded as dead when it is demonstrated that he is not alive. The extraordinary tenacity of life shown by the excected heart is really marvelous. By artificial perfusion Kuliabko elicited well marked contractions of the entire heart of the rabbit five days after the death of the animal, and the same authority completely revived the heart of a four year old boy who had died of pneumonia twenty-four hours after death.

A study of the charts in any representative work[1] on jiu jitsu shows a number of points on the body surface which, when struck, will cause either insensibility or death. The writer has exerted firm pressure over the various points in question and noted that in the majority of instances there was a reflex inhibition of the heart during the period of pressure. The latter effects were more evident when the sphygmograph was employed. The writer has demonstrated elsewhere (1), however, that the heart may be inhibited reflexly practically anywhere on the body surface, but that the definite points of election are the intercostal spaces, the abdomen, the muscles of the neck, and the region on either side of the spine corresponding to the upper dorsal vertebræ. Irritation of the mucosa of the stomach, nose, and rectum is equally effective in inhibiting the heart, but, if the mucous membranes in question have been previously cocainized, such inhibition does not ensue.

Inhibition of the organ in the foregoing instances is effected by reflex sensory impulses acting on the vagus, the inhibitory nerve of the heart. It is well known to physiologists that atropine paralyzes the motor endings of the vagus. The writer has utilized the latter fact in investigating the heart reflex (to which reference will be made later), and in studying inhibition of the heart by the manœuvres mentioned. An injection of 0.001 gramme (1/60 grain) of atropine will manifest its action within thirty minutes after the hypodermic injection and disappears in from one to three hours. During the full physiological action of the atropine, the heart reflex is abolished and pressure on various points (cardioinhibitory areas) will no longer inhibit the heart.

Jiu jitsu contestants may yet avail themselves of the foregoing fact.

Small doses of pilocarpine are almost exactly antagonistic in their action to atropine, and this applies in all cogency to their action on the vagus. After a hypodermic injection of pilocarpine (1/10 grain), one may note an exaggerated heart reflex and an accentuation of cardiac inhibition during the time pressure is made on definite cardioinhibitory areas.

In this contribution, we are specially interested in kuatsu in so far as it relates to the restoration of respiration and circulation.

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[1] A representative work of this character is that of Hancock, *The Complete Kano Jiu-Jitsu*. There are many systems of jiu-jitsu in Japan, but the Kano system has been adopted by the government.

The subject is placed in the prone posture with arms extended sideways and the operator with his wrist lands severely upon the seventh cervical vertebra with the regularity of a carpenter striking with a hammer. As soon as the patient recovers consciousness, he is placed in a sitting posture, his arms are rotated, and he is aided in walking. The latter injunction is regarded as mandatory in the application of kuatsu, the object being to completely restore the functions of the circulation and respiration, otherwise, it is said the patient relapses into unconsciousness.[2]

The heart reflex.—To fully comprehend what has preceded, reference must be made to the heart reflex. Attention was first directed (2) to this phenomenon in 1898 by aid of the x rays.

The reflex under consideration is a contraction of the myocardium of varying duration, which results when the skin of the precordial region is irritated. The cutaneous irritant may vary from a spray of ether to rubbing with a towel or by a series of percussion blows.

Myocardial contraction ensues in the sagittal and transverse diameters of the organ. Percussion of the muscles causes a retraction of the right ventricle only (myopathic heart reflex).

The reflex in question is easily observed with the x rays, although accurate percussion will show that, after outlining the heart, a notable retraction may be demonstrated after cutaneous irritation. The contraction of the myocardium implicates both ventricles of the heart after cutaneous irritation, although as a rule it is more evident in the left than in the right ventricle. It may also be noted that the myocardial recession persists even after the source of cutaneous irritation is removed.

Merklen and Heitz in the third edition of their work on the heart (*Examen et séméiotique du cœur*) observe that, while in the normal subject, the heart reflex of Abrams may be of short duration, in cardiectasis it may persist for several hours.

The diagnostic value of the heart reflex is exhaustively discussed in my recent work on *Spondylotherapy* (3).

Respecting the employment of the heart reflex in the treatment of cardiac insufficiency, one finds in the literature only a dearth of information, but I believe, from my personal experience, that more can be accomplished in a few days by elicitation of the heart reflex in myocardial insufficiency than by months of treatment with the conventional methods of Schott. The resistance movements and the balneological methods of Schott act by evoking the heart reflex, and it is only a question of how effectively this reflex may be discharged by the Schott system in comparison with other methods. It has already been noted that small doses of pilocarpine will accentuate the heart reflex, hence in the use of the Schott or any other method this drug is destined to prove a valuable adjunct in treatment. Thus, the degree of myocardial retraction (heart reflex) after scratching the præcordial region, with the blunt point of a pencil as determined by percussion measured 2 cm., and estimated by the x rays, it measured 1.2 cm. Thirty minutes after an hypodermic injection of pilocarpine (1/10 grain), the heart reflex by percussion measured 4.5 cm., and by the x ray, 2.7 cm.

This discrepancy between the percussional and x ray findings is quite intelligible. The heart reflex implicates the sagittal as well as the transverse diameter of the organ, and in consequence of the latter retreating from the chest wall, it eludes the percussion blow which is not propagated far enough to elicit dulness of the heart. The latter factor plays no rôle in the x ray examination.

Heitz (4) observes that *Le réflexe cardiaque d'Abrams* is a good guide by which to determine the probable effect of a contemplated balneological treatment.

If the size of the heart does not change under excitation of the reflex (by sharp blows over the præcordial region), the treatment will be ineffectual or may even be contraindicated, on account of the probable development of cyanosis.

In very large dilatations and in advanced myocardial degeneration, the heart does not respond to pericardial excitation and is not favorably influenced by baths. If the reaction is feeble, good results may be achieved, but the treatment must be used cautiously.

More recently Zulawski (5) investigated the *Abramsscher-Herzreflex* and found that rubbing or striking of the heart region reduced the dulness of the heart from one to one and a half centimetres and that it was of prognostic importance in myocardial weakness. If, he continues, one can demonstrate the heart reflex even in high grades of cardiac insufficiency, a good prognosis may be given.

It must be confessed that accurate percussion of the heart is necessary to determine slight differences in the cardiac diameter after præcordial excitation, but, by the method of percussion advocated by the author in his book on *Spondylotherapy* and described elsewhere (6), the difficulties of this physical method of examination is minimized.

Bloch, of Franzensbad, according to Satterthwaite, successfully uses carbonic acid douches for eliciting Abrams's heart reflex in myocardial insufficiency.

The author has shown that the heart reflex may be elicited from various regions of the body and in his studies of the amplitude of the reflex in question, he found that the most effective site is the *spinous process of the seventh cervical vertebra*, and that the most effective method is a pneumatic hammer or any similar apparatus giving a percussion stroke.

The writer has had an opportunity of gauging the efficacy of vertebral concussion in many acute infectious diseases implicating the heart and he has noted the almost miraculous action of the method in question.

Recently, the writer saw a patient with apex pneumonia in consultation with Dr. V. G. Vecki, of San Francisco, the eminent genitourinary specialist. The patient was practically moribund. During the course of her disease, the conventional cardiac stimulants were employed. Suddenly during the night, however, she became extremely cyanotic and pulseless and it was determined to concuss the seventh cervical spine to awaken, as it were, the enervated heart. No percussion apparatus was at command and, in lieu of the latter, the palmar surfaces of the fingers were applied to the seventh cervical spine, and, with the clenched fist, the dorsal surfaces of the fingers were struck a series of short and vigorous blows (Fig. 1). The latter method of concussion was continued for about ten minutes with intervals of rest. Soon after concussion was commenced, the cyanosis became less evident and the pulse was again perceptible. Every two hours during the night this method was continued and thereafter at less frequent intervals until convalescence was established. It was evident to the nurses and others that after each *séance* of the concussion treatment there was an immediate evanescence of the cyanosis and the pulse always became stronger and less frequent.

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[2] The minute details of the method are not recounted although regarded as important by authors on the subject. In the opinion of the writer, the essential feature of the method is concussion of the seventh cervical spine.

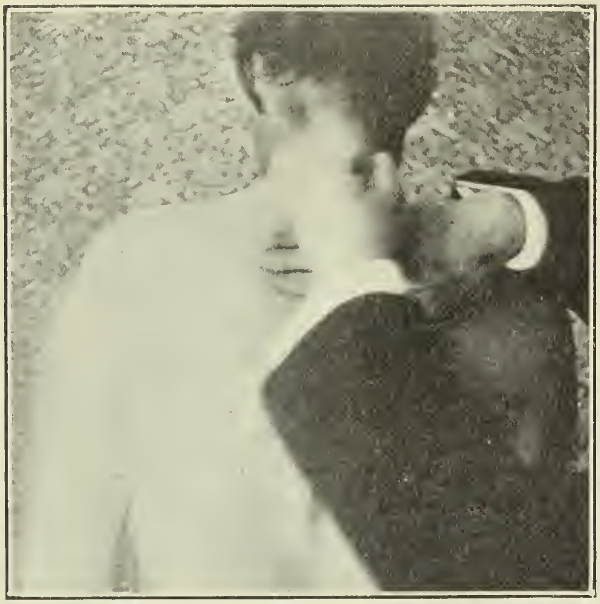

Fig. 1.—Showing the method of concussing the spinous process with the hands for eliciting the heart reflex.

It is conceded that pneumonia is the most fatal of all acute diseases, that there exist no specific medication, and that the most important indication is to maintain the circulation. I am firmly convinced that the systematic execution of the method cited will prove of material aid in hastening recovery from this dread disease, which otherwise may prove fatal.

An efficient percussion apparatus should be at the physician's command in all acute diseases and, as Dr. Vecki suggests, after operations when there is any danger of cardiac implication. I must emphasize, however, the necessity of a suitable apparatus. The latter must give a percussion stroke. All other motions, such as oscillations, shaking, and friction, yield absolutely no results.

Cardiac tonicity and innervation.—The resistance of the myocardium in stretching during diastole represents the tonicity of the cardiac muscle. In the normal state stretching of the cardiac parietes is effected by the pressure of the blood which enters the heart from the large veins and is essentially a venous pressure. It follows that in high venous pressure, provided the cardiac tonicity is compromised, a cardiac dilatation must ensue. In the latter condition the amount of residual blood in the heart usually exceeds the systolic output of the organ.

In the vagus of the frog there is one set of fibres which only influences the heart rate (chronotropic effects), whereas another set increases the force of the contraction and cardiac tonicity without affecting the rate. The latter tonic fibres in the vagus are stimulated by the usual cardiotonics, but the action of the latter is inhibited if the vagi have been cut or paralyzed by atropine. The action of the cardiac nerves has always been a subject of contention.

The vagus slows the action of the heart (inhibitory action), whereas the accelerator nerves quicken the action of the heart. Both nerves in the norm are in tonic activity.

Reference to Fig. 2 shows the origin and course of the cardiac nerves, and Fig. 3, the relations of the segments of the spinal cord and their nerve-roots to the bodies and spines of the vertebræ.

It will be noted that, the spinous process of the seventh cervical vertebræ corresponds to the third dorsal segment of the spinal cord and which in turn corresponds to the root origin of the third thoracic nerve. Reference to Fig. 2, shows the association between the latter nerve and the inferior cervical ganglion.

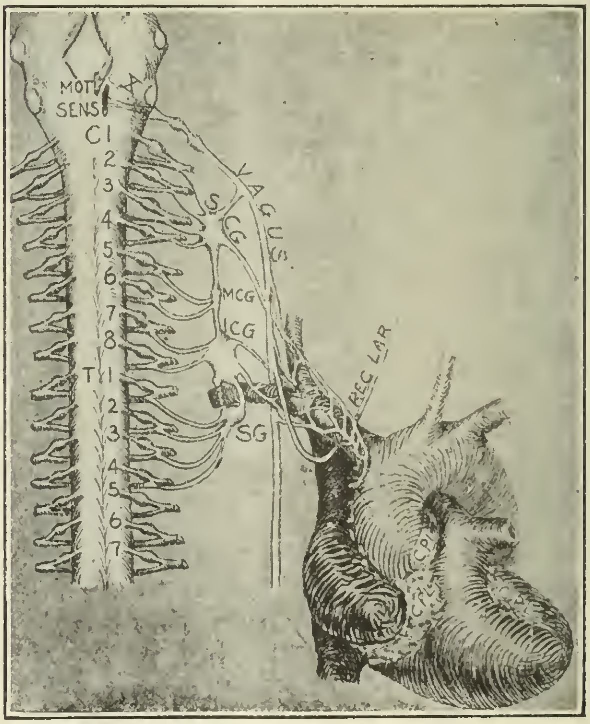

Fig. 2.—Origin and course of the cardiac nerves. Motor and sensory nuclei of the efferent (motor) and afferent (sensory) fibres of the vagus. *C, 1* to *8* and *T, 1* to *8*, cervical and thoracic (dorsal) spinal nerves; *SCG, MCG, ICG*, superior middle and inferior cervical ganglia; *REC LAR*, recurrent laryngeal nerve; *CPL*, cardiac plexus (after Powell, Gibson, and Hirschfelder).

The writer has shown empirically that the best site for stimulating the vagus and thus increasing the force of cardiac contraction and cardiac tonicity is the spinous process of the seventh cervical spine. The most effective excitant of the heart reflex is concussion, which is a mechanical stimulus and that the reflex in question may be elicited with the same certainty and precision as are the reflexes by the vivisectionist in his laboratory.

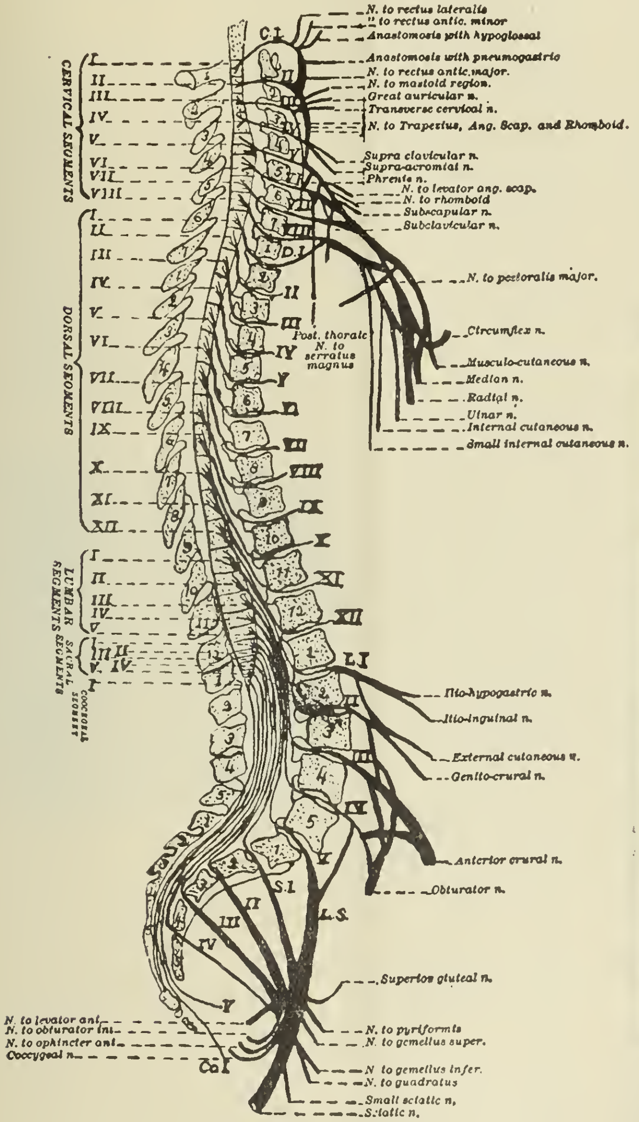

FIG. 3.—The relations of the segments of the spinal cord and their nerveroots to the bodies and spines of the vertebræ. (Déjérine and Thomas, modified by Starr.)

A just appreciation of the latter facts by the clinician will prove of great value to him in the treatment of myocardial insufficiency and as an aid in resuscitation. They also explain the kuatsu method of reanimation.

In conclusion, I may say for academic purposes only that the heart reflex cited is the heart reflex of contraction. The counter reflex of dilatation, may be evoked when the spinous processes of the ninth, tenth, eleventh, and twelfth dorsal vertebræ are rapidly concussed in succession.

REFERENCES.

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2. *Medical Record*, March 26, 1898.
3. *Spondylotherapy*, 1910, p. 209.
4. *Lyon médical*, December 3, 1905.
5. *Deutsche medizinische Wochenschrift*, March 31, 1910.
6. *Presse médicale*, February 6, 1907.

246 POWELL STREET.

SOME CIRCINATE SYPHILIDES.

By JEROME KINGSBURY, M. D.,
New York.

CASE I. Patient was a single woman, twenty-seven years of age, employed as a cutter in an underwear factory. She was native born, well developed, and apparently in good general health. Five years ago an operation was performed for appendicitis and since then she had not menstruated. Some time after the operation she was informed that both ovaries, as well as the appendix, had been removed. She stated that she never had any vaginal discharge and no history was obtained of any early symptoms of syphilis. During the past year she had had a number of large disfiguring scaly rings on her face. The eruption improved at times without specific treatment. but never got entirely well. When shown before the Society of Dermatology and Genitourinary Surgery at the May, 1910, meeting she presented on chin an orbicular lesion nearly four inches in diameter. There was also a very characteristic squamous eruption on the right thumb and part of the palm. The locations, corresponding to points where greatest pressure was made by a large pair of shears that she was accustomed to use in her work. I am indebted to Dr. William B. Trimble for the photograph from which the accompanying illustration was made. (See Fig. 1.)

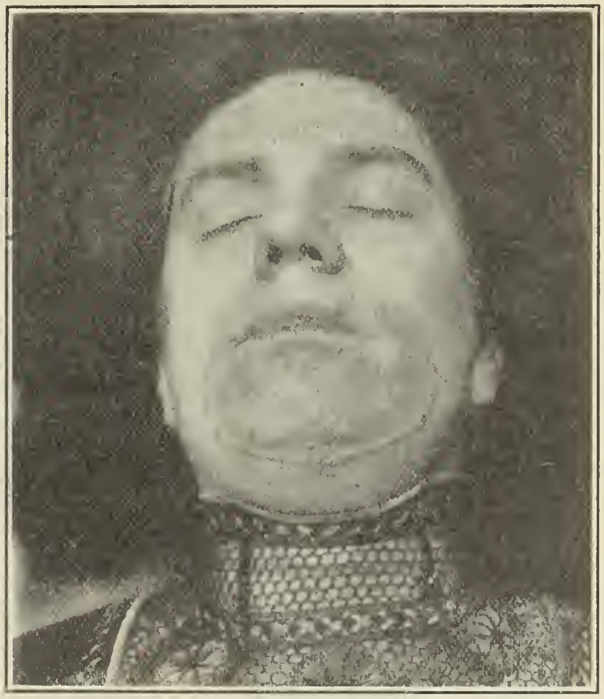


FIG. 1.—Case 1. Large circinate syphilide.

CASE II. This case is one that was presented at the April, 1909, meeting of the New York Dermatological Society. The patient was a married woman, twenty-two years of age. Curiously enough she had had an operation similar to the one referred to in preceding case. There was no history of syphilis, but she had had an eruption on scalp for past two years. When shown before the society, there were present three unusually perfect rings on top, back, and left side of scalp; this last extending from scalp to back of external ear. The lesions varied in size from two to three and a half inches in diameter. The borders were considerably elevated and made up of thick grayish scales. No general seborrhœa of scalp. Hair was moderately thick and of fair length but was dry and brittle from repeated applications of hydrogen peroxide.

Case III. This patient was a young French woman about twenty-four years of age. When first seen she presented a very perfect orbicular lesion on the left side of chin and corresponding cheek. It was about three and a half inches in diameter, and the skin in the centre was apparently normal. The border was three eighths of an inch wide and was made up of rather thick, adherent scales on an erythematous base. This lesion had been present for over two months. There were several smaller and less perfect rings on the right forearm, said to have been of same duration as the lesion on face. There was a suggestive but unsatisfactory history of infection about two years previous to the appearance of these lesions. The woman had had no specific medication for the early manifestations of the disease.

Case IV. This case as well as all of the following are from my service at the Presbyterian Hospital Dispensary. Patient was shown at a recent meeting of the Section in Dermatology at the Academy of Medicine. She was a negress, twenty-nine years of age, married six years but had never been pregnant. She stated that she had had "ringworms" on her face for about three months and gave a history of previously having had some eruption of a different character on her body and around genitals. When presented there were several pigmented areas on her chest and back but there was no evidence of any active lesions on the trunk or extremities. The face, however, was practically covered by a very typical, as well as beautiful eruption of the annular variety. Fortunately it is not necessary for me to attempt to describe the arrangement of the lesions as several very excellent photographs of the case were taken for me by Dr. Ruickoldt, late house physician of the Skin and Cancer Hospital, and one of them is here reproduced. (See Fig. 4.) The eruption disappeared very readily with appropriate treatment but subsequently gumma on the legs and thighs developed.

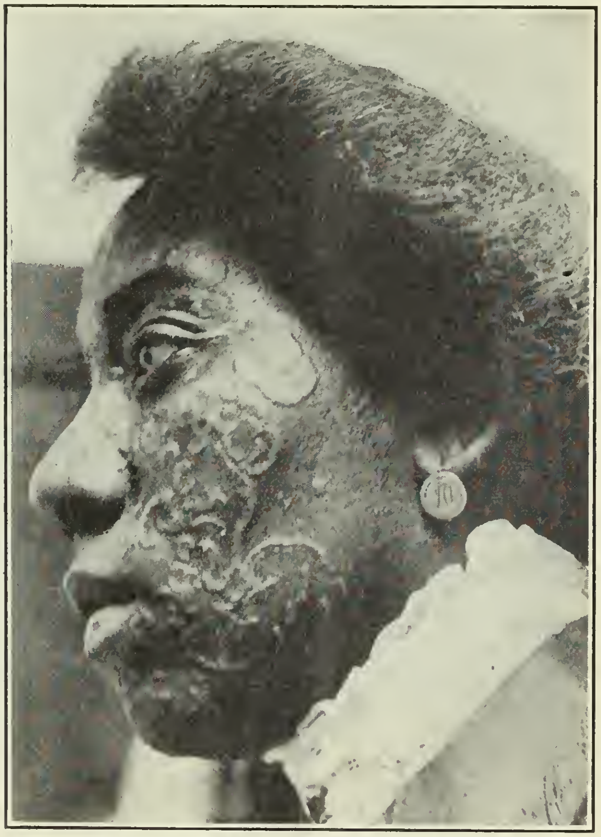


Fig. 2.—Case IV. Small circinate syphilide.

Case V. Patient was a strong, well developed boy seventeen years of age, born in this country of Swedish parentage; blond hair and very fair skin. The eruption was confined to the face and consisted of about a dozen ringed lesions with waxy borders varying from three eighths to one inch in diameter. There was general adenopathy and characteristic ulcerations in the throat. For about one month the hearing in the left ear had been considerably impaired. There was no history of chancre or early secondaries, and careful examination failed to reveal the site of former. There was, however, some evidence suggesting possible inoculation on left tonsil.

Case VI. This next syphiloderm is one of considerable interest on account of the extent of the eruption and of the peculiar beauty and symmetry of many of the individual lesions. The patient was shown before the Manhattan Dermatological Society. The patient was a Bohemian, twenty-five years of age. He was employed as a sausage maker and was strong, well nourished, and apparently in robust health. Gave an indefinite and unreliable history regarding chancre and early secondaries. For six months, however, he had had an annular eruption on face, trunk, and extremities. When first seen, about three months ago, there were over two hundred of these lesions, varying from one half to two inches in diameter. Borders were smooth, hard, and of waxy appearance. Since then many of the lesions have disappeared, but as treatment was irregular and inadequate, new rings developed from time to time. When presented before the society there was considerable pigmentation on the back at the site of previous lesions. There were small but characteristic rings around the nostrils and upper lip and numerous rings of larger size on trunk and upper extremities. In several places on the trunk, small intermingled rings were found inclosed in larger ones.

Case VII. This case is one that was presented before the Society of Dermatology and Genitourinary Surgery several years ago. The patient was a full blood negro; employed as a railroad porter. He was a native of the West Indies but had been in this country for many years. Although his hair was quite white, he insisted that he was but forty-seven years of age. Impossible to obtain history of any early manifestations of syphilis. Only cutaneous evidence of the disease at the time he was before the society was a circinate, squamous lesion in the centre of forehead breaking over the bridge of the nose. It was said by the patient to have been present for over a year. The ring was about two inches in diameter, the border was moderately elevated and was an eighth of an inch wide. The lesion rapidly disappeared when man was placed on specific treatment.

39 West Thirty-ninth Street.

THE FULGURATION TREATMENT OF PAPILLOMATA OF THE BLADDER.

By Leo Buerger, M. D.,
New York,

Assistant Adjunct Surgeon and Associate in Surgical Pathology, Mount Sinai Hospital; Associate Surgeon, Har Moriah Hospital.

and Abraham Leo Wolbarst, M. D.,
New York,

Consulting Genitourinary Surgeon, Central Islip State Hospital; Genitourinary Surgeon, People's Hospital, West Side German Dispensary and Beth Israel Hospital Dispensary; etc.

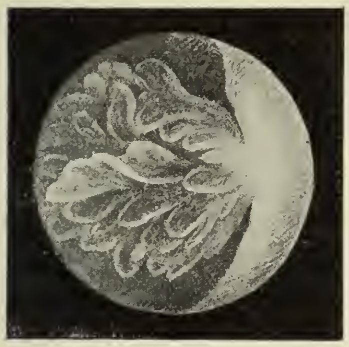
The reports of good results obtained with endovesical fulguration of papillomata of the bladder by Beer and Keyes, Jr., have led us to give this method a trial in three cases. Owing to the fact that the cases were treated but recently, it would be audacious to attempt to prognosticate either as to the likelihood of local recurrence or as to the probability of metastasis elsewhere in the bladder. At the present writing, however, we can say without hesitation, that as far as can be ascertained by cystoscopic and urethroscopic examinations, a complete cure of all these patients has been brought about, and we can therefore, judging by the immediate effects of the treatment, endorse the views of Beer and Keyes to the effect that in fulguration we have an easy and effectual method of removing these troublesome growths, without a cutting operation.

Case I. I. S., Russian, thirty-seven years of age, married, father of three children, was referred to one of us (Wolbarst) by Dr. M. Goldberg, in November, 1909. He had been troubled with occasional pain on urination for some four or five years. From time to time the urine had been bloody, and for some weeks past, the color of his urine had given him much concern, for he thought that it was more than half bloody. He had lost much flesh and strength.

Cystoscopic examination revealed a large papilloma just behind and to the left of the left ureteral ostium and partly overhanging it. The tumor was estimated as being about the size of a medium sized plum. A piece of tissue was removed for microscopical examination through a catheterizing cystoscope and found to be a typical papilloma.

December 5, 1909. Suprapubic cystotomy (Wolbarst); excision of the tumor and cauterization of the pedicle. Hæmorrhage was very profuse and was controlled only by packing the bladder. Convalescence uneventful.

January 11, 1910. Cystoscopic examination showed a complete disappearance of the primary growth. At the left side of the vesical sphincter, however, there appeared an irregular shadow, which suggested the presence of another growth lying in the sphincter region and in the beginning of the posterior urethra. A few days later, examination with the cystourethroscope (Buerger)[1] showed the small papilloma depicted in Fig 1.



Papilloma at the sphincteric margin, seen through a cystourethroscope.

February 8, 1910. Cauterization of the tumor with the electrocautery through the cystourethroscope. Only a very slight reduction of the size of the tumor followed this treatment.

March 8, 1910. Cystourethroscopic examination:—The tumor had increased in size and had evidently been growing rapidly toward the bladder. The patient did not return, after this visit, till May, when it was decided to use the high frequency current.

May 27, 1910. The tumor was now more than three times as large as it appeared in January, having rapidly extended inward along the left side of the juxtasphincteric region of the bladder. The Oudin current was applied with a unipolar insulated electrode, through a special operating cystoscope (Buerger).[2] The electrode was directed against the pedicle of the tumor and also against some of the tufts which were lying in the bladder. Three applications of fifteen seconds duration seemed to suffice to cause a marked degree of whitening to take place. During this treatment scorched particles of tumor were set free and on urination after the removal of the cystoscope, a large number of tumor shreds were passed.

June 22, 1910. The larger part of the tumor had disappeared, only a few necrotic particles remaining adherent to the mucosa at the site of the pedicle. The mucous membrane in the immediate neighborhood was markedly injected.

June 16, 1910. A small ulcer with a velvety margin marked the situation of the former pedicle. There had been no pain or discomfort at any time. Urine was clear.

July 9, 1910. Complete healing had taken place. There was no scar, but a pale mucous membrane occupied the site of the papilloma.

August 17, 1910. Cystourethroscopy was entirely negative. The patient had gained much flesh and strength and had resumed his work in perfect health.

Case II. Patient was referred to one of us (Buerger) by Dr. J. J. Asch, in June, 1910. There was a small pedunculated papilloma about 8 mm. high, and with a very narrow pedicle just behind the left ureteral ostium. One application of the Oudin current for five seconds was sufficient to remove the growth completely.

Case III. A. H. E., forty years old, patient of Dr. A. L. Oberdorfer, was referred to one of us (Buerger) on June 25, 1910. The patient had attacks of hæmaturia about twenty years ago, which were repeated off and on during some eight or nine years. There was a free interval of about ten years from 1889 to 1909, but for the last year, the hæmorrhage had been more frequent and more severe than ever before.

Cystoscopic examination showed a large fungiform papilloma, the centre of which occupied a point behind and to the outer side of the left ureteral orifice. Its surface was estimated to be at least 4 cm. in diameter, for it extended distally as far as the sphincter, coming into contact with it, and posteriorly for a somewhat shorter distance.

Treatment with the high frequency current was begun on July 2d, the duration of each application being determined by the amount of cauterization attained. Inasmuch as it was difficult to estimate the depth of the destruction produced by surface contact with the electrode, we contented ourselves with short applications of from ten to thirty seconds, to successive portions of the growth, repeating the procedure at intervals of a week. The treatment was given on July 9th, 16th, 23d, and 30th. On the last date a small necrotic mass about 1.5 cm. in diameter was all that was left of the tumor.

August 13th. Cystoscopic examination: An oval ulcer, about 4x7 mm., surrounded by velvety mucous membrane, markedly injected. There was not a vestige of tumor tissue.

September 3d. The ulcer has almost disappeared; the site of a part of its periphery is occupied by somewhat injected velvety mucous membrane which has a verrucous appearance. It seems advisable to fulgurate this since the possibility of the presence of some papillomatous tissue in it cannot be absolutely denied.

September 27th. The verrucous area was cauterized by the high frequency current in order to prevent recurrence. The ulcer has completely disappeared; there is no trace of tumor.

Conclusions.

1. The de Keating-Hart method of fulguration of tissues when applied to bladder papillomata in the manner suggested by Beer, offers an easy and reliable mode of treatment. Local anæsthesia applied to the bladder is sufficient to eliminate pain.

2. Three cases of bladder papilloma, in this series, responded excellently to this method of treatment. Apparently a cure has followed in each case.

3. Although the exact modus operandi of the high frequency current is not thoroughly understood in practice, we may regard this type of fulguration as a method of cauterization which easily surpasses the electrocautery in the facility with which it can be employed in the bladder.

40 East Forty-first Street.

105 East Nineteenth Street.

THE SURGICAL TREATMENT OF CHRONIC GASTRIC AND DUODENAL ULCER AND OF CANCER OF THE STOMACH.

By William D. Hamilton, M. D.,
Columbus, O.

Pain after food is a common symptom of chronic gastric or duodenal ulcer. The fact that it occurs in from an hour and a half to two hours after meals. is enough to suggest, if it persist, that the ulcer may be at or near the pylorus. The tendency to lie down on the back to be relieved of the pain may point to a lesion of the anterior wall of the viscus. So even an habitually assumed posture may be at least suggestive of the possible location of the ulcer. When pain occurs four or five hours after food, the duodenum may be the seat of the ulcer. On the other hand, more than two hours and less than five hours may describe in a way the interval between the ingestion of food and the occurrence of the pain of duodenal ulcer. Tenderness is more liable to be elicited during an exacerbation of either lesion, if there is some encroachment of the ulcer upon, or approximation of it toward the investing peritonæum. The ingestion of food may relieve, at least for a short time, the pain of duodenal ulcer, while in the case of gastric ulcer, it may enhance the patient's discomfort. So in a large proportion of cases, the fact that the pain has some kind of habitual definite relation to the time at which food is taken is enough to suggest, if it is only even periodically persistent, the presence of ulcer of the stomach or duodenum, provided it comes approximately at least within the limits of time indicated.

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[1] *American Journal of Surgery*, May, 1910.

[2] This instrument will be described in a future publication.

To guard against excessive chronicity of ulcer and its complications, and to cure it as well, is largely the object of this discussion.

No.	Patient's initials	Age	Attending physician	Date of operation	Result	Diagnosis	Operative interference and comment
1	Miss A. B......	22	Dr. Stage, Columbus, O.	February 27, 1907	R	pyloric stenosis; gastric and duodenal ulcer	posterior gastroenterostomy.
2	Mr. J. L........	24	Dr. Meade, Sedalia, O.	December 6, 1907	R	duodenal ulcer	posterior gastroenterostomy.
3	Mr. P. G.......	27	Dr. Dunham, Columbus, O.	March 3, 1908	R	pyloric stenosis; duodenal ulcer	posterior gastroenterostomy.
4	Mr. C. C. C....	50	Dr. Bain, Kenton, O.	August 6, 1908	R	duodenal ulcer	posterior gastroenterostomy.
5	Mr. W. L. S...	62	Dr. Eastman, Fredericktown, O.	December 12, 1908	R	gastric ulcer (lesser curvature); gallstones	posterior gastroenterostomy; calculous cholecystectomy.
6	Mrs. R. B.....	35	Dr. C. E. Turner, Columbus, O.	May 25, 1909	R	ulcer in lesser curvature; chronic pancreatitis	posterior gastroenterostomy; cholecystotomy.
7	Mrs. M. R.....	67	Dr. Donley, Columbus, O.	June 15, 1909	R	ulcer about lesser curvature	posterior gastroenterostomy.
8	Mr. G. H......	58	Dr. Cooperrider, Columbus, O.	October 19, 1909	R	perforated gastric ulcer	closure of ulcer by suture; posterior gastroenterostomy.
9	Mrs. N. McK..	49	Miller Station, O.	October 29, 1909	R	gastric ulcer, gallstones	anterior gastroenterostomy; calculous cholecystotomy.
10	Mr. G. R......	37	Dr. C. S. Hamilton	November 24, 1909	D	duodenal ulcer	anterior gastroenterostomy.
11	Mr. E. H......	43	Dr. Miller, Delaware, O.	November 26, 1909	R	stricture of pylorus from ulcer	posterior gastroenterostomy.
12	Mr. F. C.......	45	Dr. Shriner, Columbus, O.	December 10, 1909	R	duodenal ulcer; stricture of pylorus	posterior gastroenterostomy.
13	Mrs. J. M. McC.	56	Dr. Robbins, Seneca Mills, O.	October 7, 1909	R	ulcer on anterior surface of pylorus; gallstones	posterior gastroenterostomy; calculous cholecystotomy.
14	Mr. W. M.....	62	Dr. Boon	January 21, 1910	R	ulcer at lesser curvature	partial gastrectomy; posterior gastroenterostomy.
15	Mr. T. S. Y...	47	Dr. C. S. Hamilton	February 4, 1910	R	ulcer at pylorus	posterior gastroenterostomy.
16	Mr. T. F. D...	50	Dr. C. S. Hamilton	March 21, 1910	D	duodenal ulcer	posterior gastroenterostomy.
17	Miss M. L......	54	Dr. Dunham, Columbus, O.	August 19, 1909	R	gastric ulcer	partial gastrectomy; anterior gastroenterostomy.
18	Mr. J. McC....	25	Dr. C. E. Turner, Columbus, O.	April 29, 1910	R	duodenal ulcer	posterior gastroenterostomy.
19	Mr. J. B.......	41	Dr. Holcomb, Corning, O.	May 19, 1910	R	duodenal ulcer	posterior gastroenterostomy.
20	Mr. D. J.......	60	Dr. Rarey, Columbus, O.	January 10, 1909	R	pyloricstenosis; gastric and duodenal ulcer	posterior gastroenterostomy.
21	Mr. J. A. A....	61	Dennquat, O.	July 22, 1907	R	adenocarcinoma of stomach	partial gastrectomy; anterior gastroenterostomy.
22	Mrs. P.	41	Dr. Shriner and Dr. Dixon	August 12, 1907	R	gastric carcinoma	posterior gastroenterostomy.
23	Mr. C. P......	65	Dr. McGavran, Columbus, O.	September 27, 1907	R	gastric carcinoma	posterior gastroenterostomy.
24	Mrs. F. H. W..	68	Dr. McCurdy and Dr. Carr, Coshocton, O.	February 17, 1908	D	gastric carcinoma	anterior gastroenterostomy
25	Mrs. V........	42	Dr. Rowles and Dr. Vorhies, Cambridge, O.	February 21, 1908	R	gastric adenocarcinoma	posterior gastroenterostomy.
26	Mrs. H. H.....	69	Dr. Holcomb, Corning, O.	October 27, 1908	R	gastric carcinoma	posterior gastroenterostomy.
27	Mr. L.........	63	Dr. Dennison, Ohio	October 30, 1908	R	gastric carcinoma	posterior gastroenterostomy.
28	Mr. V. J. O....	46	Dr. Harding, Columbus, O.	November 30, 1908	R	cancer of pylorus	posterior gastroenterostomy.
29	Mr. O. B......	47	Dr. Moore, South Charleston, O	June 7, 1909	R	cancer of pylorus	posterior gastroenterostomy.
30	Mr. G. G......	45	Dr. C. F. Turney, Columbus, O.	October 16, 1908	R		undoing of posterior gastroenterostomy; in statu quo.
31	Mr. C. W......	42	Dr. Stanley, Athens, O.	May 10, 1907	R	perforated gastric ulcer	suturing of perforation.
32	Mr. J. M. B....	28	Dr. Brown, Chillicothe, O.	June 27, 1907	R	perforated duodenal ulcer	omentum sutured over perforation after it had been stitched.

Pain, nausea, vomiting, hæmetemesis, attacks of peritonitis, with or without crippling adhesions, or cicatricial distortion, emaciation, anæmia, invalidism, phthisis, or even cancer and death, these are a few of the incidents, or results of chronic gastric ulcer without going more into the numerous pathological complications besetting ulcer of the stomach. That duodenal ulcer, too, is liable to mark its presence by many of those symptoms is undoubtedly true.

There have been in the last three years and a half, thirty-two patients in the practice of Dr. Charles S. Hamilton and myself, who, on account of chronic gastric ulcer or cancer, or for the relief of chronic duodenal ulcer, required some kind of operation upon the stomach, with three deaths and twenty-nine recoveries. There were nine cases of cancer of the stomach. Gastroenterostomy was done in eight instances, one of them terminating fatally. A partial gastrectomy was done upon the ninth patient, who improved for a few months, but succumbed later to recurrence of the disease. Death supervened within a few months or a year or two in most of the operative cancer cases.

The writer does not wish to be considered a pessimist in his inferences about either gastroenterostomy as a palliative measure for cancer of the stomach on the one hand, nor in regard to partial gastrectomy as a surgical expedient for malignant disease of the organ, on the other. One of our patients, of a former series, operated upon by one of us many years ago, lived three years after a gastroenterostomy for what was supposed to have been cancer of the pylorus. A second operation upon him three years later, displayed extensive and inoperable infiltrating cancer of the pyloric end of the stomach. It has occurred to the writer that the patient might have been suffering when first operated upon from thickening about a chronic ulcer of the pylorus; that it may have been at that time in the precancerous stage; and had partial gastrectomy been done when he was first operated upon, it would in all probability have resulted in a cure. With reference to partial gastrectomy for cancer, one of our patients operated upon by one of us more than five and a half years ago, from whom two thirds of the stomach was removed for cancer, is still in good health and free from recurrence. Extensive enlargement of omental lymphatic glands in his case seemed at the time to invalidate the undertaking, and they were evidently the seat of inflammatory change, as five and one half years of health since gastrectomy was done seem to have shown.

In view of the fact that there have been half as many cancers of the stomach operated upon as ulcers of the stomach and duodenum together, during the period of time covered by this clinical report a few comments upon malignant disease of the stomach may not be here out of place. When an individual, especially one past the middle of life, all at once in a few weeks, for unaccountable reasons, begins to loose flesh and strength, and to become anæmic, and especially if with it there is sour stomach, the suspicion of cancer of the stomach may well be entertained as at least a prominent alternative diagnostic hypothesis, in the solution at this time, of what may turn out to be a most important and imperative surgical problem. The determination of the blood conditions, to exclude for instance pernicious anæmia, as has been suggested by Mr. Robson, is of evident value. For these sufferers from even early gastric cancer, often show rather marked anæmia. Now it is at this stage, as Mr. Robson has pointed out, and, too, before there is a palpable tumor, that partial gastrectomy is most hopeful, at a time when it may cure the patient. In other words, if the medical attendant in charge of a patient with early gastric carcinoma waits for the outside proof of cancer of the stomach which a palpable, nodular tumor may eventually suggest to him, he is preventing his patient from having a relatively harmless exploratory diagnosis, at a time when partial gastrectomy would have given his patient a fair chance of cure.

The diagnosis of gastric or duodenal ulcer is presumptive until the abdomen has been opened, and it is not improbable that this limitation upon our scientific knowledge may also remain so. The heedless, precipitate opening of the abdomen for diagnostic purposes is to be deprecated. All kinds of evidence which may be pertinent to the case should be used and recorded, before operation is done. Mr. Moynihan has called attention to the anamnesis, the patient's own written account of his disability up to the time of his admission. Now and then one may get invaluable hints from such a recital of symptoms, for one cannot become so clever in a diagnostic way but that some important facts may fail to receive proper emphasis, and these unlooked for features of the case may be brought to light by a more careful perusal of the patient's anamnesis, and by repeated and careful physical examinations. Test meals with their associated investigations, while of some value, should not be relied upon too implicitly. In a similar category are examinations of the fæces for occult blood. While it is desirable beforehand to get all such contributory or negative evidence, and all such pertinent information in each case, each method derives its value very largely by association with other evidence.

The history, the anamnesis, the physical examinations, test meals, microscopical search for occult blood in the fæces, examinations of the blood, bacteriological and otherwise, will all have been given their true associated value and weight in the mind of the surgeon, and these facts may do much to enlighten him as to diagnostic probabilities before opening the abdomen.

Seeing is often believing in surgery. Seeing and feeling through an ample and properly located incision may be essential to comprehension and to safe inference as well, though pathological examination of a section of tissues alone can give in most instances indisputable evidence in cases in which there may be ground for doubt.

Surgeons are agreed that it is only when a demonstrable, palpable, and usually visible lesion is shown to be present, that gastroenterostomy should be done. It is a favorable fact in the outcome from gastroenterostomy if the ulcer or its resultant scar is at or near the pylorus, even though obstruction from pyloric stenosis exists.

It is evidently true from the literature of the last few years, that duodenal ulcer is much more common than was formerly supposed.

The recital in this connection of the following history may not be altogether devoid of interest:

CASE I. Mr. J. McC., a locomotive fireman, a patient of Dr. Charles Turner, of Columbus, gave the following anamnesis, which while not scholarly, was pointed and instructive: "The pain began in my stomach, about four years ago. It was a gnawing kind of a pain. It was always worst about two hours before I would eat, but just as soon as I would eat something, I would be relieved for the time being. The pain kept getting worse, and within the past year I had violent attacks at intervals of every ten days. Sometimes the pain would leave my stomach and would go across to my right side along under the ribs. It was very severe and often kept me awake at nights. For two years I have been belching a sour gas, and it would give me a great relief, at times when I got rid of the gas." At the operation, just beyond the pylorus, a mass was found as large as an unhulled walnut, in the posterior wall of the duodenum. It was evidently a case of chronic inflammatory thickening about an ulcer of the duodenum. Posterior gastroenterostomy with simple suture of the free incisions which had been made in the approximated viscera, has completely relieved his suffering and he is now quite well.

The technique of the operation of gastroenterostomy is in its main features an established fact; likewise the general principles governing the excision of an ulcer or of a considerable portion of the stomach wall for cancer, which are essentially agreed upon. The more important thing, however, is that the application of these procedures is correct.

The writer has included in this list the case of a man, upon whom posterior gastroenterostomy, and an enteroanastomosis and one or two other abdominal procedures had been done prior to his admission to our service.

Intractable vomiting in an ill conditioned starveling, who had evidently been suffering from atonic dilatation of the stomach, had not been relieved by operation, but had been aggravated by it. I have seldom seen such formidable adhesions as were encountered in his case, while engaged in undoing the gastroenterostomy and in restoring the parts to something like their former condition. The vomiting ceased for a time, and temporary improvement followed. He represents, however, a type of hospital patients in whom the environments of poverty minimize and jeopardize even nutritional palliation in feeble defectives. Gastroenterostomy in its legitimate application yields most beneficent results. The relief is most striking and is generally highly satisfactory to the patient and to the surgeon as well. For an individual who has been tortured with pain after food, for an indefinite time, or with dietary restriction or curtailment of the food list, or impairment of strength, or physical incapacity to make a living, or with any of the other annoyances which are liable to beset the sufferers from chronic gastric or duodenal ulcer, it is a very great relief for such a sufferer to be able to enjoy food and the return of health, which so commonly result from the performance of gastroenterostomy in suitable cases of chronic ulcer. That we have been called upon to operate in three cases of perforation, one of duodenal and two of gastric ulcer in the period covered by this clinical report, is enough to suggest that perforation is not by any means an infrequent complication of ulcer.

The following history may serve to illustrate this pathological disaster:

Case II. Mr. G. H., a negro barber, age fifty-eight, of Columbus, entered Mt. Carmel Hospital, October 20, 1909. His parents died of old age; four sisters dead, and one living and in good health. For many years he drank rather freely, but in the last few years had been a teetotaler. He had had stomach trouble for the past two years, and at times while at work in his barber shop was seized with severe pain in the pit of the stomach, followed by vomiting, which gave him temporary relief.

At two o'clock on the afternoon of the day of his admission, the patient ate a large dinner, and about an hour later, while at work, he had violent epigastric cramps, which doubled him up, and he was in this posture when visited by Dr. G. W. Cooperrider, who gave him a hypodermic injection of morphine. This gave some relief, and he remained at his shop until nine o'clock that evening, when he was taken home. The pain afterward became localized in the right upper quadrant of the abdomen where it continued until about midnight, the time of his admission.

He vomited twice with marked relief, after the attack of pain. The skin was cold, he was sweating, and had a slight chill. When seen by one of us, the pulse was 106, temperature. 99° F.; he looked very ill, was suffering greatly, and was lying on his right side. The abdomen was very rigid, almost, in fact, boardlike, and a tympanitic area could be made out, under the costal arch, between the right nipple and the median line. There was a feeling of air, in a space under the right costal arch. There was tenderness on pressure over the pyloric end of the stomach. He entered the hospital in a very exhausted condition. Though naturally very slender, his weight had fallen from 124 to 114 pounds in the previous six months.

Operation was done about ten and a half hours after the initial paroxysm. An incision was made in the middle of the right rectus muscle. It revealed a leaking open ulcer on the anterior surface of the pylorus. The hole in it would about admit the head of a parlor match. The gallbladder was normal. Plastic material was visible on the liver, on the suspensory ligament of that viscus, on the gallbladder, and on the duodenum. When the abdomen was opened, a small quantity of gas escaped but much more of it after delicate adhesions near the ulcer were released. Inflammatory thickening around the ulcer made a precise estimate of its size difficult, and also made the purse string suture only partially successful. A tag of omentum was also sutured over this area. The stomach was quite empty. Posterior gastroenterostomy was done with a decalcified bone bobbin, and a tube drain was put into the right kidney pouch. The only leakage seemed to have been in the vicinity of the ulcer and in the right kidney pouch, and consisted of a straw colored, fat appearing fluid, but this ceased before the parietal wound was closed. He left the hospital on the eighteenth day after admission and is now in better health than at any time in the past thirty years, being in every respect quite well.

The following case possesses certain features which suggest the occasional propriety of partial gastrectomy for chronic gastric ulcer:

Case III. A man, age sixty-two, patient of Dr. B., had been in good health until twelve years ago when his suffering began, with attacks of pain in the abdomen, either gastric or intestinal, which had with the lapse of time become more frequent and severe. The last was in May, 1909. He vomited at one time a large amount of blood, which appeared, too, at the time in the fæces. The bowels were constipated, and four or five days sometimes elapsed without a movement. Though somewhat emaciated, he had recently gained slightly in weight. The bleeding had ceased. He had pyrosis and bloating, suffered habitually severe pain about one hour after meals, vomited almost every day, and usually at night also.

The observations made by Dr. J. J. Coons, pathologist, were as follows: Hæmaglobin, eighty per cent.; white cells, 6,000; differential, seventy-five; gastric contents, hydrochloric acid, 16; total acidity, 44; a considerable amount of mucus.

The greater curvature was at the level of the navel.

Associated Observations: 1. Vomited a large amount of blood in May, 1909, and passed blood by the bowel. 2. Much pain in the region of the stomach, aggravated by taking food, and never absent, and more severe while fasting. 3. Tender point in the region of the pylorus. 4. Free hydrochloric acid present. 5. Absence of leucocytes.

Diagnosis: Chronic ulcer of the stomach.

Operation, January 20, 1910. Incision through the middle of the right rectus muscle. An indurated ulcer was found at the lesser curvature with general adhesions there, obliterating the gastrohepatic omentum. The pylorus was markedly contracted. On account of the adhesions, it was necessary to begin by boring through with the finger, beneath the duodenum, afterward turning in its end, proceeding next to the partial gastrectomy. Afterward gastroenterostomy was done, turning the jejunum against the posterior surface of the altered and reduced stomach. Omentum was placed over all suture lines and no drain was used.

This man had before his operation a virtual morphine habit, and after its effects were entirely over, he would grunt and howl as though having pain in his bowels, and he wanted morphine; to such an extent did he do this that he impressed those about him as being at the time, a sufferer from mental unsoundness. In spite of all, he ate well, and increased in strength, made a prompt recovery, and is now in excellent health in every way.

The question, after the abdomen has been opened, as to whether one may have to do with inflammatory or neoplastic tissue is one with which surgeons are confronted. The writer has a strong prejudice against excising during an operation, a portion of a hollow viscus like the stomach to obtain tissue for immediate freezing and microscopical examination, although it is, of course, the crucial pathological test. If it is malignant, however, one is confronted with the possibility of reimplanting cancer on healthy tissue.

Some years ago an ulcer as large as a silver twenty-five cent piece was excised by the writer from the cervix of a patient in whom very early cancer was suspected. Microscopical examination of the tissue proved it to be carcinoma. Great care was taken at the time to prevent soiling of the contiguous anatomical surfaces. Vaginal hysterectomy was done a few days later, but extensive inoperable local recurrence of the disease appeared in less than three months after it.

The following case of chronic gastric ulcer, pyloric stenosis, dilatation and hypertrophy of the walls of the stomach will here be à propos.

Case IV. Miss M. L., æt. fifty-four, a patient of Dr. J. D. Dunham, of Columbus, had been for ten years a sufferer from dyspepsia. Severe pains in the stomach, loins, and epigastrium had for some time annoyed her. For ten years she had been obliged to cut down the intake of food. Pyrosis and discomfort followed rather constantly the ingestion of all food during the four months prior to her admission. The bearing down pain in the abdomen after eating, she had occasionally relieved by raising up with her hands the abdominal walls and the contiguous visceral contents of that cavity. Pain after food was a rather constant symptom. She was emaciated, anaemic, feeble, toxæmic, and starving. She had a heavily coated tongue, foul breath, pallor, vertigo, and was greatly prostrated.

Operation August 19, 1909. An incision was made to the right of the median line from near the ensiform cartilage to a point below the navel. The pylorus, almost closed, felt somewhat craggy on its posterior surface and a pucker could be seen and felt. There had evidently been an ulcer at or near the pylorus on its anterior surface. Along the lesser curvature throughout a large part of its extent, and on either side of it, there was a good deal of thickening of the gastric wall. An extensive saddle ulcer occupied the lesser curvature near the pylorus. The stomach walls were generally thickened, while a high degree of dilatation of the organ existed. The lymphatic glands in the greater omentum were enlarged, and as those in both omenta were discrete, it was inferred that the disease might be benign and not cancer, though there was doubt in the minds of Dr. Dunham and Dr. Coons, who were spectators, and in the mind of the writer himself as to the nature of the disease. Partial gastrectomy was done. The stomach was divided well to the left of the apparent seat of the disease and of the enlarged lymphatic glands as well. It was planned in such a way that, should it turn out to be either malignant disease, or in the precancerous stage, the section would be well away from the disease. The writer inferred that the radical removal of a large part of the stomach, that evidently had in its substance at least, much chronic ulcer scar tissue, would be a surer way of removing permanently the invitation to cancer, than to merely do gastroenterostomy without partial gastrectomy. Anterior gastroenterostomy was the last important step, it being more feasible than the posterior operation. Dr. Coons made subsequently several sections, showing the disease to be chronic gastric ulcer.

The patient is now in excellent health. She is fat, can do to her entire satisfaction all her housework, eats three good meals daily, sleeps well, and explained to the writer when he called upon her recently to ascertain her condition that she had planned to call upon him for the purpose of telling him how well she felt.

The coincidence of gastric ulcer and gallstones is shown by the following case:

Case V. Mrs. N. McK., forty-nine years old, a resident of Miller Station, O., gave a very good family history, showing her people to have been fairly rugged. The patient had six living and seven dead children, and had had four miscarriages. Patient had been well until within the past six years when she had typhoid fever. Stomach trouble had been her complaint for several years, especially since March, 1908. She vomited frequently and was unable to retain food in the stomach. Severe pain came on one hour after eating. She had had no hæmatemesis. Sour stomach, an habitually coated tongue, a bad taste in the mouth, and belching, had been rather constantly observable symptoms. There was tenderness on palpation over the pylorus. The pain, severe and cutting in character, beginning in the right side, in the region of the gallbladder, extended to the left and across the abdomen. Jaundice had several times appeared.

Examination showed: Free hydrochloric acid, 0,0; total acidity, 16.10; lactic acid, 0.0. Examination of fæces for occult blood was negative. No raisins in gastric contents twelve hours after eating them. In addition to these observations our pathologist, Dr. Coons, made the following notes: Dilatation of stomach, history of probable ulcer. Cicatricial obstruction; beginning motor insufficiency.

Operation, October 29, 1909. An incision through the right rectus muscle found extensive thickening of the pylorus and walls of the stomach, the distal three-eighths of the organ being involved. The swelling was rather soft in consistence. There was no glandular enlargement. The posterior wall was the seat of such extensive thickening that it was impossible to bring down enough of the cardiac complement of the organ to do a posterior short circuiting operation, so anterior gastroenterostomy was done by suturing together the freely incised stomach and jejunal walls. One gallstone only, as large as an acorn, was found in and was removed from the thickened gallbladder, no other concretions being elsewhere present in the biliary apparatus.

Dr. McKnight, of Morgan Station, O., the patient's attending physician, says that she is doing finely, has gained in flesh and in weight, has a good color, and has no trouble of any kind. He is very enthusiastic in his estimate of the great value of the operation. This woman had been in other hands, in another institution for six weeks just before entering our own service. She had been during that period under medical treatment. She stated in her anamnesis that she had been advised to go home, as nothing further could be done for her. It only suggests to all of us who have committed to us the lives of the sick, that habitual persisting, unremitting efforts to solve these diagnostic riddles will minimize our oversights and regrets as well.

150 East Broad Street.

OBSERVATIONS ON THE VARIABILITY OF THE GASTRIC JUICE.*

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In the diagnosis of gastric disorders considerable importance is given to the results of the analysis of the gastric contents. The presence of hydrochloric acid in its different combinations, pepsin, and rennin is determined, and variations of any very marked degree may be of diagnostic value, and also of great value in the matter of treatment. The material analyzed is either that obtained after giving some one of the well known test meals, such as Ewald's, Boas's, or some of their modifications, or that obtained after the patient has taken his ordinary meal. The analysis of the material obtained after the test meal is supposed to be more valuable in that it allows of comparison with a great many other analyses after the same food has been eaten. Thus certain normals are established and individual deviations may be easily noted.

In the following paper I have confined my attention to the variations which may occur in the composition of the gastric secretions when the same test meal is given and the influence of certain foodstuffs and beverages on the same secretions.

In all the experiments I have given the findings as to the total acidity as determined by the Toepfer, Hayems, and Winter methods, the free hydrochloric acid by the Toepfer method, pepsin by Mett's method, and gastric motility by the method of Mathieu and Renoud.

Pawlow has called attention to the remarkable action of psychic influence on the gastric secretions, his experiments apparently seem to show that the secretion resulting from such influences, and which he terms "appetite juice," is of greater importance by far than the secretion resulting from the chemic stimulation of the food. The great essential to this secretion appeared to be a passionate desire or craving for the food. Our test meals are ordinarily not of such a nature as to appeal to the patient's appetite, moreover, he is usually in a high state of excitement incident to the unpleasant experience which he anticipates with the tube, it being probably his first experience. He crowds down the food and then awaits his punishment in no pleasant state of mind. The meal is removed, and the results obtained by analysis of the meal taken under such conditions are made the basis for future therapy.

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*Read before the American Gastroenterological Association, June 6, 1910.

Below I am reporting a series of cases in which the variations of the secretions are noted when the same test meal is given under as nearly similar conditions as possible.

Estimated stomach contents in cubic centimetres.	Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.
		Case I—H. H.				
840	Ordinary	0.144	0.154	0.114	4	0.14
203	"	0.288	0.288	0.180	4	0.59
189	"	0.336	0.360	0.268	3	0.63
		Case II—C. C. K.				
107	Regular breakfast	0.308	0.336	0.228	2	1.12
49	" "	0.296	0.300	0.244	2	2.64
34	" "	0.172	0.174	0.082	3	3.52
36	" "	0.322	0.340	0.188	5	3.32
66	" "	0.306	0.312	0.218	4	1.76
44	" "	0.432	0.442	0.376	4	2.72
		Case III—E. A. D. G.				
139	" "	0.150	0.192	0.082	3	0.84
152	" "	0.122	0.118	0.028	3	0.78
356	" "	0.194	0.076	0.020	2	0.33
161	" "	0.150	0.130	0.070	2.5	0.74
80	" "	0.096	0.076	.0	1.7	1.50

Case I shows the result of three test meals, the subject being a healthy young laboratory assistant who had been accustomed to the procedure and it occasioned apparently not the slightest excitement. We note here a considerable variation between the first and third. The total acidity, calculated acidity, and free hydrochloric acid being more than doubled in the third test.

Case II shows the results of analysis of a series of seven test meals, the subject being a well nourished man, of thirty-five years of age, of a slightly neurotic tendency and inclined to worry about his digestion. We note here a variation in the total acidity of from 0.172 to 0.432 mg., calculated acidity from 0.174 to 0.442, and free hydrochloric acid from 0.082 mg. to 0.376 and in pepsin coefficient from 2 to 5.

Case III. Subject a man in apparent health, aged thirty-eight. Here we have a fluctuation of total acidity from 0.096 mg. to 0.194 mg., calculated acidity from 0.076 to 0.192 mg.; free hydrochloric acid from 0 to 0.082; pepsin from 1.7 to 3.

From the results of these cases, and I might have recorded many more, I am sure that it is very apparent that under as nearly similar conditions as possible we note a very great fluctuation in these secretions where the same food, under as nearly similar conditions as possible, is ingested. Since the secretion is under the control of the nervous system we should, it seems to me, not give too great weight to the findings of one test meal. Especially if this meal is administered to a nervous patient who as far as the particular food taken is concerned, is entirely without appetite, and moreover, is very apprehensive as to the operation soon to follow when it will be removed by the tube.

Pawlow has shown that food taken without desire fails to produce any gastric secretion for a very long time. He states as follows: "If bread or egg albumen is eaten without appetite, or introduced into the stomach unobserved, they lie there for a long time, just as stones would lie, without the least appearance of digestion." Since bread is the ordinary material used in the test meal, it would seem from this that the results might not be very valuable as a means of determining the secretion under more favorable conditions; when there is a passionate desire for the food.

I am sure that the time is past when variations from the normal in the gastric secretions are considered pathological conditions in themselves, but they are rather regarded as symptomatic, and even here we must exercise some care or they may be misleading. I do not wish to condemn the test meal as being useless as a diagnostic aid, but I do believe that more satisfaction and trustworthy data can be secured by lavage after the patient has eaten food for which he has experienced some craving and without his anticipating that it is to be taken from him by means of the tube a few moments later.

Frequently a patient comes to the specialist after having been in the hands of the general practitioner and at the beginning of treatment having been given a test meal, the analysis of which had been made the basis on which the physician outlined his treatment. Possibly the patient has been under his care for months without any further investigation with reference to the gastric secretions. Finally the patient drifts into other hands and another test meal reveals just the opposite condition of the secretions as were observed in the first analysis. It is not an unusual thing to find a patient suffering from excessive acidity who has been faithfully dosed for weeks with hydrochloric acid and pepsin mixture along with compound tincture of gentian and tincture of nux vomica. A short time ago a patient came under my care suffering from a subacute gastritis. Frequent analyses of the stomach contents showed entire absence of free hydrochloric acid; yet he had received each day before his dinner a lavage, after which there was administered through the lavage tube and allowed to remain in the stomach, eight ounces of olive oil. The patient quite regularly after this meal suffered from nausea and vomiting. After leaving off the olive oil his vomiting ceased, and with light diet for a few days he made a very satisfactory recovery.

I am reporting another series of cases in which a squad of four well nourished healthy young men were given different kinds of foods and analyses made. Because of the variations which are observed in the before mentioned cases, four subjects were used instead of one, so that the individual element might be eliminated so far as possible. If all four subjects were affected in the same way, the evidence would be quite conclusive that the food taken must have been a strong factor in producing the variations.

The test meals were given three times each week so that the frequent use of the lavage tube might not in any way disorder digestion or their appetite. All entered heartily into the studies and none of them experienced any aversion to the operation or the foods used.

They were first given a test meal of toast one and one half ounces and eight ounces of water at the ordinary temperature, with the following results:

Experiment I.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast	0.084	0.092	0.026	0.25	4.0	H. S. K.
“ “	0.148	0.152	0.068	0.6	3.0	T. T.
“ “	0.056	0.092	0.006	0.06	1.2	E. J. W.
“ “	0.160	0.212	0.054	0.06	1.3	C. D. J.

In Experiment II ice water was given instead of water at ordinary temperature. With three of the individuals there was a slight decrease in the secretions, both total acidity and free hydrochloric acid being slightly lowered. The motility possibly delayed somewhat. It would seem from these results that the ingestion of ice cold water has but slight inhibitory effects on the gastric secretions.

Experiment II.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast plus hot water.	0.120	0.138	0.030	0.14	6.2	H. S. K.
“	0.184	0.192	0.126	4.0	2.3	T. T.
Regular breakfast with ice water after one hour.	0.022	0.072	0	0	1.2	E. J. W.
“	0.110	0.118	0.048	0.25	0.41	C. D. J.
“	0.150	0.150	0.092	0.76	3.0	T. T.
“	0.100	0.124	0.046	1.0	1.99	H. S. K.

Experiment III differed from the ordinary test meal in that eight ounces of iced milk was given instead of the water. There were slight variations in each case from the normal, and on the whole a moderate increase in secretions noted. Comparing this with results obtained after ice water, it would seem that it had a more favorable result. Iced milk is a beverage quite commonly used at certain seasons of the year, and is ordinarily considered, along with other iced food, to have a retarding effect on the secretions. In these experiments no unfavorable action could be observed.

Experiment III.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with iced milk.	0.090	0.118	0.020	0.06	3.7	H. S. K.
“	0.196	0.216	0.090	1.0	2.6	T. T.
“	0.158	0.162	0.034	0.25	4.3	E. J. W.
“	0.212	0.232	0.056	0.6	2.1	C. D. J.

In Experiment IV the milk was taken at 70° F. instead of iced. We note here but little change from Experiment III, so that we were not able to observe that whole milk at ordinary temperature had any more favorable effect on the gastric secretions than when taken ice cold. Possibly because of greater relish on the part of the subjects, there was a moderate increase in the secretions over the normal test meal or when ice water was ingested.

Experiment IV

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with eight ounces of milk, ordinary temperature	0.076	0.112	0.020	0.25	0.66	H. S. K.
“	0.232	0.244	0.070	0.25	6.0	T. T.
“	0.128	0.148	0.020	0.6	7.5	E. J. W.
“	0.188	0.208	0.068	0.6	4.4	C. D. J.

Experiment V illustrates the action of eight ounces of lemonade at ordinary temperature, when taken with the toast as a substitute for eight ounces of water. We note here in each case a marked increase in both the total and free hydrochloric acid, almost double the amount present with the ordinary breakfast or the milk. With none of the subjects was lemonade used habitually as a beverage at meals nor was it particularly relished, so that we may conclude that it must have exercised a marked local stimulating effect. I think you have quite frequently observed that patients with hyperchlorhydria usually suffer inconvenience after indulging in beverages containing organic acids.

Experiment V.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with eight ounces of plain lemonade	0.336	0.360	0.060	0.6	0.44	H. S. K.
“	0.324	0.362	0.138	3.3	1.0	T. T.
“	0.366	0.380	0.066	0.25	3.0	E. J. W.
“	0.380	0.388	0.116	1.0	2.8	C. D. J.

In Experiment VI the same amount of lemonade was given as in Experiment V, but ice cold. In three of the cases there was a slight increase in the total acidity and in all the free hydrochloric acid was somewhat increased. The pepsin in both experiments with the lemonade was increased moderately. The motility was not markedly affected. It has ordinarily been held by the profession that lemonade hindered digestion and especially so if taken ice cold. This would not be indicated by the results of these tests, but on the contrary it would seem that taken either at ordinary temperature or iced it tends to quite markedly increase the acid secretion. Aside from its nutritive value it would seem to be a much better beverage for some individuals than milk or plain water. It might be concluded from these results that patients suffering from insufficient secretion of hydrochloric acid and pepsin might with benefit use such beverages with their meals.

Experiment VI.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with ice lemonade	0.316	0.348	0.084	0.25	4.8	H. S. K.
“	0.352	0.360	0.164	0.6	2.5	T. T.
“	0.362	0.382	0.080	1.56	3.7	E. J. W.
“	0.454	0.460	0.156	0.56	1.7	C. D. J.

In Experiment VII six ounces of cream, containing twenty-five per cent. of fat, was given. We note here that the total acidity as compared with the results obtained from the analyses of the ordinary test meal, was but little affected, but in each of the four subjects there was a complete absence of free hydrochloric acid and no peptic activity. The motility was slightly decreased.

Experiment VII.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with six ounces of cream......	0.172	0.184	0	0	1.9	H. S. K.
“	0.232	0.234	0	0	1.6	T. T.
“	0.090	0.136	0	0	1.3	E. J. W.
“	0.150	0.180	0	0	1.8	C. D. J.

Experiment VIII was same as VI except that the cream was frozen. The results were practically the same. Only in one subject was there a trace of hydrochloric acid or pepsin. To ascertain if possible how long the cream retarded the free acid secretion, a heavier meal of known composition was given and allowed to remain for three hours. We note here practically the same results,—but a very little free hydrochloric acid and but little pepsin activity.

Experiment VIII.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with six ounces of ice cream..	0.092	0.124	0	0	1.6	H. S. K.
“	0.190	0.240	0.012	0	2.1	T. T.
“	0.096	0.144	0	0	0.73	E. J. W.
“	0.118	0.152	0	0	1.2	C. D. J.

Pawlow has shown very nicely and beyond question that fat not only greatly lessens the amount of gastric secretion, but the secretion had a much lowered digestive power. He offers two theories as to this retarding effect. "Either the fat hinders the secretion directly in a mechanical way—for example, by covering over the mucous membrane of the stomach and preventing the excitation of its nerve endings, or else indirectly by reflexly stimulating the inhibition of the glands, or the inhibitory centres of these nerves." He decides after careful investigation that the second hypothesis is the more tenable and if it is able to so inhibit the psychic secretion, that it must much more markedly inhibit the secretion which results from direct stimulation of the mucous membranes.

Other fats were tried, as olive oil, nut meal, which was very rich in fat, with practically the same results. As a result of clinical experience with cases of excessive acidity and cases of gastric and duodenal ulcer, many physicians have observed the beneficial action of fats and were using them even before Pawlow had given out the results of his work. The beneficial effects of olive oil seems so firmly fixed in the minds of some that it is prescribed indiscriminately without first determining the cause of the disturbance by analysis of gastric contents, so that it is not a rare thing to find that the patient suffering from achylia gastrica, gastric catarrh, or hypochlorhydria has under his physician's advice religiously persevered in taking olive oil with anything but satisfactory results.

To compare the action of cream and ice cream with fruit ices, the squad was given fruit ice, strawberry flavor.

The results when the same material was given not frozen, but at ordinary temperature. In Experiment IX we find a marked increase over the results of the ordinary test meal in total acidity, free hydrochloric acid, and pepsin. Comparing the results with those obtained after the use of ice cream or cream, we find as marked an increase above the normal as there was depression with the cream. Again it seems impossible to attribute it to any preference on the part of the subjects as they took their ice cream with as great relish as the fruit ice. We seem to have a comparison between the organic acids and the fat, one acting as a stimulant and the other as a depressant.

Experiment IX.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with strawberry ice (frozen)...	0.158	0.172	0.040	0.6	0.4	H. S. K.
“	0.280	0.316	0.114	0.4	1.4	T. T.
“	0.190	0.200	0.048	0.25	1.6	E. J. W.
“	0.260	0.260	0.104	0.25	2.2	C. D. J.

When the same material was given unfrozen, shown in Experiment X, there was a still further increase noted in the total acidity with two of the squad in the free hydrochloric acid. The peptic activity was not increased.

Experiment X.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with strawberry juice (not frozen)	0.340	0.376	0.096	0.06	0.96	H. S. K.
“	0.366	0.378	0.104	0.09	1.3	T. T.
“	0.238	0.262	0.076	0.6	4.4	E. J. W.
“	0.242	0.248	0.080	1.56	2.3	C. D. J.

Comparing Experiment IX, in which frozen fruit juice was given, with Experiment VIII, we note a great difference between the action of ice cream on the gastric secretion and fruit ice, and apparently in either the temperature had but slight action as shown by Experiment VII and X.

In Experiment XI, to the eight ounces of water given with the regular meal one drachm of the compound tincture of gentian was added. With one of the squad there was a slight increase, but compared with the lemonade or the fruit ice it appears quite insignificant.

Experiment XI.

Meal.	Total acidity.	Calculated acidity.	Free hydrochloric acid.	Pepsin.	Motility.	Name.
Regular breakfast with one drachm of compound tincture of gentian	0.014	0.120	0	0	2.4	E. J. W.
“	0.138	0.138	0.054	2.25	3.3	C. D. J.
“	0.130	0.148	0.048	0.14	0.58	H. S. K.
“	0.208	0.204	0.110	0.5	2.5	T. T.

SUMMARY.

From these experimental studies it would seem that we might draw the following conclusions:

1. That with the same food materials there may be quite a marked variation in the percentage of composition of the gastric juice which may result from psychic influences.
2. Iced foods or beverages have only a slight inhibitory action on gastric secretions.
3. Foods containing free fats in any quantity when taken either at ordinary temperature or frozen have a decided inhibitory effect on gastric secretions.
4. Fruit juices either frozen or at ordinary temperature quite markedly increase the secretion.
5. Compound tincture of gentian seems to have but little effect as a gastric stimulant.

SHAKESPEARE'S KNOWLEDGE OF MEDICINE.

By Max Kahn, M. D.,
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"Ignorance is the curse of God,
Knowledge the wing wherewith we fly to Heaven."
(*Henry VI*, Part 2, Act 4, Scene 7.)

It has become so customary for all the learned professions to claim Shakespeare for an honorary member, that one finally concludes that the "Stratford rustic," as some of his critics deign to call him, was in himself a tome of all the knowledge of his time. The seemingly profound learning that this "rustic" possessed of law, medicine, divinity, and the natural sciences, has given rise to a movement in the middle of the last century whose object it is to discredit Shakespeare of the authorship of the dramas which bear his name, and to instate Francis Bacon, Lord Verulam, the man who had made "all knowledge his study," as the true author of these dramas. "Literary criticism," as Georg Brandes says, "is an instrument which, like all delicate tools, must be handled carefully, and only by those who have a vocation for it." But the Baconian movement fell into the hands of "raw Americans and fanatical women." A Miss Delia Bacon went so far as to have the grave of William Shakespeare opened, stating that she had discovered a cryptogram in Bacon's writings which would clear up everything (*Putnam's Magazine* for January, 1856). "She hovered about the grave night and day, but at last left it undisturbed," since it contained no manuscripts. Ignatius Donnelly, a lawyer and a member of Congress, wrote a book of several hundred pages, called *The Great Cryptogram; Francis Bacon's Cipher in the So called Shakespeare's Plays.* Both of these authors finally became insane, unfortunately after they had written their imbecile books, which, sad to say, have found so many adherents on this side of the Atlantic.

That Shakespeare is privileged to belong to the honorable and ancient guild of medicine has been the contention of some of the most eminent practitioners of the healing art. The many references that the poet has in his works to the various medical sciences and arts would convince one that he had read books on medicine and that he had studied the writings of the ancient Greeks and Romans. In 1860 Dr. Bucknill, an eminent English neurologist of that time, wrote a book on the medical attainments of Shapespeare, and in it he goes so far as to say that the poet was far in advance of his own time, and that his knowledge of medicine was as perfect as that of the nineteenth century. This has been disputed.

There has been a tendency for some time, especially among the laity, to crown Shakespeare with the laurels of Harvey. It is doubtlessly true that the great dramatist knew as much as was known in his time about the circulation of the blood, but it is as undoubted a fact that he was not in advance of his contemporaries in that knowledge. Even the ancients were cognizant of some "blood flow." Plato in his *Timæus* speaks about circulation: "Cor vero venarum origo fonsque sanguinis per omne corpus impetu quodam manantis." This is in the Latin translation. The word that has been translated "fons" is "*ἅμμα*," the real meaning of which is "knot"; i. e., the "heart is the knot of the veins." Aristotle and his successors, Erasistratus and Herophilus, believed that the veins carried blood from the heart to all parts of the body and that the arteries carried a certain "vital spirit." Galen, however, taught that besides a vital spirit, the arteries also carried some blood. Andreas Cæsalpinus (1519-1603), the great Italian botanist, who occupied the chair of that subject in the University of Pisa, speaks vaguely of "blood circulation," but there is no evidence that he knew more than Galen. About the same time (1559) Realdus Columbus in his book *De Re Anatomica* affirmed that the blood and vital spirits passed from the right ventricle to the left, not through the septum, but through the lungs. Michael Servetus, the ill fated physician whom Calvin burnt at the stake, knew perhaps as much as Harvey about the circulation of the blood.

Shakespeare, therefore, tells us what the learned of his time knew well. Menenius, relating the fable about "the belly and the members," makes the belly say of its food:

"I send it through the rivers of your blood,
Even to the court, the heart, the seat o' the brain;
And through the cranks and offices of man,
The strongest nerves and small inferior veins,
From me receive their natural competency
Whereby they live."
(*Coriolanus*, I, i.)

Again in *Julius Cæsar* (II, i), Brutus, speaking to Portia, makes this remarkable statement:

"You are my true and honorable wife;
As dear to me as are the ruddy drops
That visit my sad heart."

The ghost, telling Hamlet (*Hamlet*, I, v) how he was poisoned, says that the venom

"Holds such an enmity with the blood of man
That swift as quicksilver it courses through
The natural gates and alleys of the body;
And with a sudden vigor it doth posset
And curd, like aigre droppings into milk,
The thin and wholesome blood."

This is a clear description of coagulation of the blood. But in none of the works of Shakespeare do we find any reference to arterial circulation. Byron sagaciously remarks:

"To fast—to study—to see no woman!
Flat treason 'gainst the kingly state of youth.

. . . .

Why, universal plodding prisons up
The nimble spirits in the arteries."

And again in another passage in *Hamlet* (I. iv) the author suggests that "nimble spirits" rather than blood circulated through the arteries:

"My fate cries out,
And makes each petty artery in this body
As hardy as the Nemean lion's nerve."

It is clear, therefore, that it was William Harvey who in 1628 truly discovered the circulation of the blood through the veins and the arteries, leaving for Malpighi the important demonstration of capillary circulation (1661), which discovery was made possible by the invention of the microscope.

Shakespeare's knowledge of insanity was immense.

His portrayal of Ophelia and Lear has been judged perfect by the greatest alienists. He well knew the workings of the mind, and he must have diligently studied the diseased mentation. His Ophelia very strongly reminds one of a case of manic depressive insanity. She sings, she weeps; she is exhilarated and depressed in succeeding intervals. She has flights of ideas and is continually passing from one topic to another; but, withal, her mood is deep and we are inclined to join her in her tears.

"*Ophelia*—Where is the beauteous majesty of Denmark?
"*Queen*—How now, Ophelia?
"*Ophelia* (sings).

. . . .

"*King*—How do you, pretty lady?
"*Ophelia*—Well, God 'ild you! They say the owl was a baker's daughter. Lord! we know what we are, but know not what we may be. God be at your table.

. . . .

I hope all will be well. We must be patient; but I cannot choose but weep to think they would lay him i' the cold ground. My brother shall know of it, and so I thank you for your good counsel. Come, my coach! Good night, ladies; good night, sweet ladies; good night, good night."

Shakespeare well knew of the effects of the day's business upon night's slumbers. In the famous sleep walking scene in *Macbeth*, we have a complete picture of the unholy work of some previous day. The remorse of conscience, the fear, the horrible courage that she possessed, the wild ambition, and again that biting, torturing, dominating remorse—all these are striving for mastery in her tortured soul. Mark how she begins her soliloquy:

"Yet, here's the spot."

Madame Modjeska used to say that there was more in that monosyllable "yet" than in any other word in the world's literature.

> "Out, damned spot! Out, I say.—One; two; why, then, 'tis time to do 't.—Hell is murky!—Fie, my lord, fie! a soldier and afeard? What need we fear who knows it, when none can call our power to account?—Yet who would have thought the old man to have had so much blood in him?——
>
> "The Thane of Fife had a wife; where is she now?—what will these hands ne'er be clean?—No more o' that, my lord, no more o' that: you mar all with this starting——
>
> "Here's the smell of blood still: All the perfumes of Arabia will not sweeten this little hand. Oh! oh! oh!"
>
> (*Macbeth*, V, i.)

Lady Macbeth has olfactory and visual hallucinations, a suitable accompaniment of somnambulism.

Shakespeare must have read and reread Rabelais, the author of *Gargantua and Pantagruel* and *Panurge*. Indeed, Brandes suggests that *Panurge* was the forerunner of *Falstaff*, "that globe of flesh spotted over with continents of sin," only the former is more selfish and slothful but less witty and loquacious. From Rabelais Shakespeare must have learnt much of his medical knowledge and in this respect he had a very great teacher, since Rabelais was an embodiment of all the learning of his time. When one considers how much the great poet knew of the various sciences, one wonders "how and where he found opportunities to acquire such knowledge which astonishes even the learned of today."

We have but few allusions to the anatomy of the human skeleton and to the nerves and muscles. Nevertheless, as Dr. John Knott says, the references which we do find are made with remarkable discrimination and represent the best knowledge of Shakespeare's day. Shakespeare appears to have had no knowledge whatever of muscles as distinct entities in the framework of the human anatomy. But this is not to be wondered at, since it was only Michael Angelo who really began the study of the surface topography of the muscles of the body, in order to make his statues more lifelike; and even he was so ignorant of the action of the muscles that he represents all the muscles as contracted at the same time, "a phenomenon which Nature knows nothing about."

The poet knew what was known in his time of surgery. He knew that a wound should be treated as promptly as possible, otherwise it will become infected and not heal well:

"Send succors, lords, and stop the rage betime,
Before the wound do grow incurable;
For being green there is great hope of health."
(*Henry VI*, 2, III, i.)

He thought that a bone which healed after a fracture was stronger than it was before, and he was aware that the fractured bone thickens when it undergoes repair. He believed in amputation of a gangrenous extremity so that the rest of the body be not involved.

"This festered joint cut off, the rest rests sound;
This, let alone, will all the rest confound."
(*Richard II*, V, iii.)

Bleeding for fevers, as was universally practised in those days, is highly recommended by Shakespeare:

"A fever in your blood, why, then incision
Would let her out in saucers."
(*Love's Labor's Lost*, IV, iii.)

"Tenting" (probing) of wounds, packing of wounds, infection of open injuries were all known to the poet. Nevertheless, we find Helena curing a case of fistula following empyema with the aid of some simple remedies that her father, a great physician, had bequeathed to her (*All's Well That Ends Well*). Mayhap that the royalty of the patient more than the efficacy of the remedies was the cause of that wonderful cure. The curses of Thersites give a goodly summary of some especially constructed "array of complaints against which it were useless to contend."

> "Now all the rotten diseases of the South, the guts griping, ruptures, catarrhs, lodas of gravel i' the back, lethargies, cold palsies, raw eyes, dirt rotten livers, wheezing lungs, bladders full of imposthume, sciaticas, limekilns in the palms, incurable bone ache, and the rivelled fee-simple of the tetter, take and take again such preposterous discoveries."
>
> (*Troilus and Cressida*, V, i.)

A student of Shakespeare must inevitably become a good syphilographer. That disease, which no nation wished to claim for its own, which the French called Italian and the Italians called French, and which the English and the Germans called either the one or the other, was ravaging Europe in those days. The licentiousness of that time and the unskilful management of this pest made this disease the scourge of humanity. It lurked with the nobleman as with the pauper. Neither were the monasteries nor the convents exceptions. Indeed, these places were in many instances veritable brothels, and their inhabitants mere bawds and whores. When one reads Rabelais's *Gargantua* or Boccaccio's *Decameron,* one fully appreciates the slothfulness and sensuality of the Europeans of the fifteenth and sixteenth centuries. Sometimes the bodies were so decayed during life, that, as Shakespeare says, they would scarce hold interment. When Hamlet asks the grave digger "how long will a man lie in the earth ere he rot?" he gets this answer:

> "Faith, if he be not rotten before he die (as we have many pocky corses nowadays, that will scarce hold the laying in) he will last you some eight year or nine year: a tanner will last you nine year."

The symptoms of syphilis as given in various parts of Shakespeare's dramas are,—baldness ("French crowns"), syphilitic affection of the bones ("hollow bones"). sciatica, laryngeal complications, destruction of the tissues of the nose, production of impotency, rheum in the eyes, bone aches, deformities, bad smell of the body, and contagiousness not only in the brothel, but also by means of drinking cups. Timon's summary is quite descriptive and his mistresses were indeed avaricious not to quake:

"Consumption's sow
In the hollow bones of man; strike their sharp shins,
And mar men's spurring. Crack the lawyer's voice,
That he may never more false titles plead,
Nor sound his quillet shrilly; hoarse and flamen that scolds; . . .
. . . Down with the nose,
Down with it flat; take the bridge quite away of him . . .
. . . Make curl'd pate ruffians bald,
And let the unscarr'd braggarts of war
Derive some pain from you. Plague all
That your activity may defeat and quell
The source of all erection."
(*Timon IV,* iii.)

Dr. Wainwright has made an excellent collection of the passages in the dramas of Shakespeare relating to the medical sciences. This collection, though incomplete, impresses the reader with the immense proportions of the subject and with the profoundness of the Master's medical knowledge. Truths, which seem to us of modern invention, have been known to the Bard of Avon, and indeed, his recommendations for diet and daily hygiene are perfect. Excesses breed gout, too much meat eating does harm to wit, periodic purging is beneficial, exposure to draughts is dangerous, wine robs wits, —all these are wise aphorisms that one finds almost anywhere in the dramas. He believed in personal cleanliness, and altogether hated the stinking breath of the crowd. Coriolanus, the aristocrat, through whom Shakespeare speaks, says contemptuously of the plebeians:

"Bid them wash their faces
And keep their teeth clean."
(*Coriolanus,* II, iii.)

The monition of the clever Nerissa is as timely now as it was several hundred years ago:

> "And yet, for aught I see, they are as sick that surfeit with too much as they that starve with nothing. It is no small happiness, therefore, to be sated in the mean; superfluity sooner comes by white hairs, but competency lives longer."
> (*Merchant of Venice,* I, ii.)

The effect of potations which inebriate but do not quench the thirst, was ever the same. The drunken porter sagely hiccoughs that besides "nose painting, sleep, and urine," it provokes and unprovokes lechery; "it provokes the desire, but takes away the performance." (*Macbeth,* II, iii.)

Shakespeare everywhere evinces marked knowledge of toxicology and in certain places quite clearly describes the toxic actions of drugs. He mentions poppy, aconite, henbane, memdragora, spotted hemlock, and many other vegetable poisons. Opium was then also used as a narcotic, and Lady Macbeth undoubtedly drugged the possets of the sleeping chamberlains with this drug. Iago poignantly remarks:

"The Moor already changes with the poison:
Dangerous conceits are, in their nature, poisons;
Which, at first, are scarce found to taste,
But, with a little act upon the blood,
Burn like the mines of sulfur."
(*Othello,* III, iii.)

A good description of poisoning, probably arsenical, is given in the last act of *King John.*

Under penalty of being accused of levity, I suggest that Shakespeare was the original proprietary medicine man. His concoctions, grotesque and odious as they are, do not rival the cure all mixtures of our own nostrum quacks, but they quite closely approach the ingredients of some of those medicines which can cure everything, from cirrhosis of the liver to pimples on the face. However, it must be remembered that the poet used these fanciful drug constituents only upon rare occasions and usually when dealing with magic and witchcraft.

In faith, it is no wonder that on such occasions the very dead uprose horrified at the concoctions:

"In the poison'd entrails throw.
. . . .
Fillet of a fenny snake,
Eyes of newt and toe of frog,
Wool of bat and tongue of dog.
. . . .
Liver of blaspheming Jew,
Nose of Turk and Tartar's lips,
Finger of birth strangled babe
Ditch delivered by a drab.
Make the gruel thick and slab."
(*Macbeth,* IV, i.)

Imagination runs rampant with such a mixture. Undoubtedly in modern times, it would be warranted to cure all aches and pains, cancer, and consumption; and, surely, no testimonials would be lacking concerning the beneficial effects of this wonderful remedy.

Vivisection is made mention of in *Cymbeline*. Then, as now, they tested the action of medicinal remedies on the lower animals. They were under one advantage in those days: There were no old maids and womanish bachelors who made it their lifework ("which otherwise is full of emptiness"), to protest against animal experimentation, and thus cause hindrances in the road to enlightenment. The queen, who would poison Imogene, says:

"I will try the forces
Of these thy compounds on such creatures as
We count not worth the hanging, (but non human)
To try the vigor of them, and apply
Allayments to their act; and by them gather
Their several virtues and effects."

Shakespeare had even some knowledge of medical jurisprudence. Besides the cognizance of the actions of toxic drugs, he knew of the appearance of the body which had been deprived of life due to violence—strangulation and drowning.

"See how the blood is settled in his face.
Oft have I seen a timely parted ghost,
Of ashy semblance, meagre, pale, and bloodless,
Being all descended to the laboring heart;
Who, in the conflict that it holds with death,
Attracts the same for aidance 'gainst the enemy;
Which with the heart there cools, and ne'er returneth
To blush and beautify the cheek again.
But see, his face is black and full of blood;
His eyeballs further out than when he liv'd,
Staring full ghastly like a strangled man;
His hair upreared, his nostrils stenched with struggling;
His hands abroad displayed, as one that gasped
And tugg'd for life, and was by strength subdued.

. . . .

It cannot be but he was murdered here;
The least of all these signs were probable."
(*King Henry VI*, 2, III. ii.)

Homœopathy, whose motto expressed in Latin is "similia similibus curantur," was recognized in the earliest times, long before Hahnemann systematized this practice. In a quatrain ascribed by Athenæus to Antiphanes (B. C. 404) we read a very homœopathic prescription:

"Take the hair, it is well written,
Of the dog by which you are bitten.
Work off one wine with his brother,
And one labor with another."

Shakespeare expresses the same idea in *Romeo and Juliet:*

"Tut, man, one fire burns out another's burning.
One pain is lessened by another's anguish;
Turn giddy, and be holp by backward turning;
One desperate grief cures with another's languish:
Take thou some new infection to thy eye,
And the rank poison of the old will die."
(I, ii.)

Still, it cannot be said that Shakespeare was at all homœopathic. He was always searching for "sweet Nature's antidote," which, indisputably, is allopathic practice.

It is interesting and gratifying to note that Shakespeare held the physician in marked esteem, although he hated the quack and the charlatan. The physicians of Shakespeare's plays are uniformly kind, honest, dignified, and learned. He made a distinction between those that practised according "to the laws of the congregated college," and those that cured without diplomas. Unlike Molière, who always ridicules the academic physician who practises according to the rules of "the faculty," and who is forever making the medical men the butt of his witicisms, Shakespeare never undervalues medicine. But he knows the limits of medicine and quite pointedly throws a shaft at the doctors who are always prescribing bitter medicines, which they, themselves would hate to partake of.

"Thou speakest like a physician, Helicanus;
Who minister'd a potion unto me
That thou wouldst tremble to receive thyself."
(*Pericles*, I, ii.)

"But I consider," says Cymbeline (V. iii), "by medicine life may be prolonged, yet death will seize the doctor, too."

Shakespeare knew of the confidence to be imposed in the physician. His practitioners are always tactful men who have learned many a family secret but have never betrayed them. Cornelius, instead of blindly aiding the queen in her nefarious practices, silently substitutes a harmless drug for a dangerous poison but he keeps the matter secret, and only reveals the truth upon compulsion. We notice how the physician in *Macbeth* says to the gentlewoman in waiting who had witnessed Lady Macbeth's sleep walking: "Go to, go to: you have known what you should not"; apparently the doctor does not place much trust in the secrecy of a chattering waiting woman; he feels as if he were the only one who should be aware of such a horrible secret.

The reproach of Macbeth to the physician is really not a contumely on medicine. It is simply the dissatisfaction of a helpless and desperate man who has lost faith in everything.

"Can'st thou not minister to a mind diseased,
Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain,
And with some sweet oblivious antidote,
Cleanse the stuffed bosom of that perilous stuff
Which weighs upon the heart?
Doctor.—Therein the patient must minister to himself.
Macbeth.—Throw physic to the dogs; I'll none of it.

. . . .

If thou couldst, doctor, cast
The water of my land, find her disease,
And purge it to a sound and pristine health,
I would applaud thee to the very echoes,
That should applaud again." . . .

Truly, medicine has its limits, but in a land which is corrupt and ignorant, it is not medicine that must be invoked to aid us, but a thorough political purgation of the falsehoods and dishonesties that infest the country.

115 SECOND STREET.

ANÆMIC ULCERS OF THE THROAT.

A Reply to Dr. G. F. Lydston.

By Albert G. Pohly, M. D.,
New York,

In answer to Dr. Lydston's questions regarding the cases of anæmic ulcers of the throat published in the *New York Medical Journal* of August 27th, I am sorry to state that no examination was made at that time for the *Spirochæta pallida,* but since publishing my article a Wassermann test has been made in Case II, that of the only one of the patients whom I could locate, with a negative result. Although it is true that syphilitic ulcers sometimes yield to topical applications of silver nitrate, and although we should accept the history of our patients, especially female patients, regarding syphilitic infection, *cum grano salis,* and, though it is also true that often syphilitic lesions do not recur for years, all these facts taken together with the appearance of the ulcer, which differs from the syphilitic by being much smaller, of about the size of a lentil, and quite shallow, with the negative result of the Wassermann test even after over six years, in view of the fact that the patient has had no antisyphilitic treatment, should prove sufficiently, I think, even to the most skeptical, that the ulcer was not of syphilitic origin.

As to the rationale of the causation of the ulcers, and whether or not some infection was present, which of course is possible, I cannot say at the present time. I can only repeat what I have stated before, that all three patients were in a very anæmic and debilitated condition.

14 East Sixtieth Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CIII.—When can a pulmonary tuberculous patient be discharged as cured? (Closed October 15, 1910.)

CIV.—How do you perform vaccination? (Answers due not later than November 15, 1910.)

CV.—How do you perform circumcision? (Answers due not later than December 15, 1910.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question CII has been awarded to Dr. E. H. Skinner, of Kansas City, Missouri, whose article appears below.

PRIZE QUESTION CII.

THE TREATMENT OF OTHER ELECTRIC SHOCKS THAN THAT OF LIGHTNING.

By E. H. Skinner, M. D.,
Kansas City, Missouri.

Electric shocks, other than lightning, occur from accidental contact with electrical currents of high voltage. These currents consist of the usual lighting circuit of 104 volts alternating and 110 or 220 volt direct; traction line circuits of from 550 to 660 volts direct; the distance transmission circuits of from 1,500 to 20,000 volt alternating current. The shocks from the smaller currents are rarely serious. The shock from the traction currents may be serious if the contact is prolonged beyond from thirty to sixty seconds. The high voltage shocks are usually profound if the contact is more than momentary, otherwise resuscitation may be accomplished.

Treatment. General considerations: First and foremost, turn off the current. Where this is impossible it becomes imminent to release the patient by taking away either the patient or the wire. The patient may be removed by any one protected by rubber boots, rubber gloves, standing on big dry planks, pulling upon patient's clothing, if dry; protecting the rescuer by heavy wrappings of dry clothing. The wire may be removed by long dry sticks, a cane, rubber hose, rubber handled pliers, looping a dry sheet around wire; a dead tree or log may be thrown at the wire to change its position. Remember that water conducts electricity, therefore all means of rescue should be dry or insulated.

Localized shock. Localized shock should be treated by placing the patient in supine position, with feet and hips elevated, hot water bags applied to extremities and heart, mustard plasters to abdomen and chest; alcoholic stimulants and strychnine are permissible. The semiparalytic condition of the extremities will improve gradually without treatment, but massage, baths, alternating hot and cold douche, and a gentle faradic current will assist nature.

General profound shock. Artificial respiration should be employed, for hours if necessary. Restoration of breathing has occurred four hours after profound electrical shock. Warmth by hot water bottles, blankets, hot packs, mustard plasters, and rectal enemata should be immediately and constantly employed. An ice bag, or cold cloths should be applied to the nape of neck. Venesection is indicated in well nourished individuals, to relieve circulatory pressure. Dilatation of rectum is commendable. The use of a strong faradic or interrupted galvanic current with the positive pole at the neck and negative over the heart or at the eleventh dorsal vertebra is suggested. High frequency currents applied over the heart and neck can be of assistance. But the one thing to remember is the artificial respiration, with tongue traction, for a seemingly unwarranted length of time. Alcoholic stimulants and strychnine may be applied, but with not much effect. Their continued use is not to be countenanced beyond the physiological dose, even when there is no apparent systemic effect.

The local electric burns should demand no unusual treatment, but they respond sluggishly. Iodoform and bichloride of mercury are said to be contraindicated. There are usually extensive sloughs. Hot saline wet dressings are best. After the slough has separated use dry gauze. Skin grafting often becomes necessary; plastic grafts will be found superior to the Thiersch method.

Dr. William J. Dugan, of Philadelphia, writes:

Death from electricity is caused 1, by paralysis of the heart, due to fibrillation of the heart muscle; 2, inhibition of respiration, due to action on the respiratory centre in the medulla; and 3, anæmia of the brain producing syncope. If the electric current is passed only through the brain and upper cord, we may revive the victim by means of artificial respiration. If, however, the heart is brought in circuit, artificial respiration will be of no avail. When the heart is in circuit the blood pressure is reduced immediately on the introduction of the current and will not be reestablished when the current ceases to flow. In this case artificial respiration will cause respiratory movements to reassert themselves, thus proving that the respiratory centre is intact; but these movements will continue for only a short time, when the respiratory centre will refuse to act because of the anæmia produced by the stoppage of circulation. When we find a person who has been shocked by electricity, we do not know whether the heart has been in circuit or not, so it behooves us to give the victim the benefit of any doubt and continue artificial respiration for at least two hours.

The approximate strength of current carried by wires in the following is: Incandescent lighting systems, 110 to 220 volts; for mechanical work, 110 to 500 volts; trolley roads, 500 to 800 volts. (This includes the third rail road.) Telegraph and telephone systems use a weak current—4 to 30 volts—but we must remember that these wires may at any moment fall upon or touch heavily charged wires and thus cause great injury to any one using the instrument.

Electric shock may cause anything in nervous diseases from a mild shock to the nervous system, producing a hysteria of a mild form, to blindness, insanity, and even death. The treatment will depend entirely upon the degree of shock sustained.

Treatment. The victim, if still in contact with a live wire, should be freed by shutting off the current; by breaking the wire by means of a piece of dry wood; by pulling the wire away by the aid of a dry rope; by cutting the wire by means of pliers having insulated handles; or by lifting the victim's body from the ground, after we have covered our hands with rubber gloves or with dry clothing. We should grasp the victim by the covered portions of his body. The patient, having been freed from the current, should be placed with the head higher than the rest of the body, so that artificial respiration will not force the contents of the stomach into the trachea. Massage over the region of the heart and the faradic current, with one electrode over the heart and the other on the neck, help greatly in reviving the patient. Of course, this is to be done by one person while another is performing artificial respiration. Adrenalin may be used to raise blood pressure. Venesection, the application of the Leduc current with a strength of fourteen volts, and also lumbar puncture are recommended. High frequency currents from a glass vacuum electrode are very useful. *Galvanism is useless.*

Burns, arborescent tracings, fractures, or other physical injury should receive appropriate treatment.

Artificial respiration should be continued for at least two hours. Many patients apparently dead for hours after an electric shock have been revived by long continued treatment. Our motto should be: "Persistence and perseverance."

Correspondence.

LETTER FROM LONDON.

The Opening of the Medical Schools.—The Field for Women in Medicine.

LONDON, *October 12, 1910.*

On Monday, October 3rd, the winter session of the various medical schools opened. In most cases an introductory address was delivered, but several of the medical schools, notably the London and "Bart's," now dispense with this formal introductory address and celebrate the opening with a dinner of present and past students. The authorities of the Middlesex Hospital usually aim at securing the services of some eminent man, not necessarily a medical man, to take part in the opening ceremony by distributing the prizes and giving an address. It will be remembered that two years ago Mr. Rudyard Kipling acted in that capacity. Last year it was Sir Ernest Shackleton, and this year they were fortunate in securing the services of Lord Kitchener for the prize distribution.

Lord Kitchener met with a great reception. He also inspected the students' corps. In his address he pointed out the vast work which had been accomplished by the Army Medical Service and Indian Medical Service and insisted upon the necessity that the combatant branch should second the efforts of medical officers in the treatment of disease in times of peace as in times of war. He bore personal testimony to the vastly improved sanitary conditions of India and of Egypt as a result of the efforts of the medical officers of the two services, but regretted that there still remained in India vast sanitary evils which had to be combated. Making full allowance for the difficulties of dealing with 300,000,000 of natives, many of them blindly obedient to creed or caste and dwelling mostly in insanitary and overcrowded cities, Lord Kitchener still found that England had somewhat fallen behind other nations in the struggle for the prevention of disease by means of organized sanitary methods, and he appealed to his audience to do their best to remedy the situation.

A very interesting address was delivered by Mr. E. W. Roughton, F.R.C.S., at the opening of the London School of Medicine for Women. The subject of his address was Woman's Sphere in Medicine. He said that of late there had been much discussion about the equality of the sexes, and in the minds of many people sex distinction was chiefly a matter of costume and political disability. For such, medicine was just one of the numerous occupations which might be taken up equally well by male or female. On the other hand, there were still some old fashioned people who believed that woman's place was in the home and that no occupations outside the domestic sphere were suitable for her.

Sixty years ago it might have been necessary for Bob Sawyer to engage in pugilism, cock fighting, wrenching off the door knockers, and such like pastimes in order to make himself sufficiently brutal to be able to perform a major operation while the patient was writhing and shrieking in agony. Such a profession was scarcely suitable for the early Victorian young woman, whose chief occupation seemed to have been keeping her hands white and making her mouth of a pretty shape by diligently repeating the words pears, prunes, and prisms. The invention of anæsthetics and antiseptics had now made surgery a gentle art, which could be practised by the most tender hearted man or woman.

Granting, therefore, that medicine was a suitable profession for women, the next consideration was the suitability of women for the profession. Many women would no doubt be inclined to dismiss the question by saying confidently "Of course they are suitable just the same as men." The question was, however, not so easily disposed of. There were certain radical differences, and these were not comprised by what were usually known as the primary sexual characters. There were other differences between male and female which were called secondary sexual characters. Some of these were self evident and therefore well known, for instance, the greater muscular development of the male, the deeper voice, the beard, and so on. These obvious characters had little or no bearing on the practice of medicine. There were other more subtle differences between the sexes which were sometimes known as tertiary sexual characters, and they were more important in deciding the suitability of the sex for the work in question. Woman had so long looked to the man as protector, breadwinner, almost owner, as the one to initiate, to lead, to control, that her capacities had been dwarfed in these directions; her powers of self reliance, origination, invention had found no outlet and had in consequence remained quiescent or at least but feebly developed, her mental growth being rather in the direction of such qualities as were comprised under what had, in consequence, come to be called womanly sweetness or, more briefly, womanliness. Evidently these qualities were more suitable for a nurse than for a doctor. If all women were alike in this sense of dependence upon men, it was fairly certain that there would be no women doctors. But the history of the woman's medical movement showed clearly that there were many women in whom the qualities of independence and self reliance were very fully developed. The mere fact of a young woman desiring to enter the medical profession showed that she possessed these qualities in some degree. With regard to the more purely intellectual powers, there was no doubt that the absolute weight of the male brain was greater than that of the female, but when we allowed for the greater size of the male and compared the proportion of brain weight to body weight, we find that women's brains were at least as large as men's, and indeed often a trifle larger.

It was therefore not surprising that the students of the Royal Free Hospital did as well if not a little better than the men students presenting themselves for the London University examinations. It was probable that there was very little difference between the intellectual capacity of the average man and the average woman; the boasted superiority of man only showed itself when we passed into the region of genius. Genius of the highest order was almost limited to the male sex, and this was in harmony with the well known law, viz., that natural variations were more common and pronounced in the male. A genius might be regarded as an extreme natural variation, in a sense an abnormity. In the matter of rapidity of perception, the advantage was distinctly with the female sex. Thus, it was by no means uncommon for a woman to be able to take in another woman's costume at a single glance and to do it so thoroughly that she was able to give a minute description of it to a friend. Such powers brought to bear upon the clinical aspect of a difficult case could not fail to be of the greatest use.

Just as there were differences between the medical man and the medical woman, so there must be differences in the kind of work they were most suited for. For many years to come men would continue to attend both sexes as they had done hitherto, but women should limit their activities to their own sex and to young children. More especially women should devote themselves to obstetrics and gynæcology. Many women were now established in general practice in most of the large towns in England, but not all women were suited for general practice. The successful general practitioner must be able to work hard all day and a large part of the night year in and year out. He or she must be able to dispense with regular meals, a full night's rest, and an annual holiday. Major surgery was only for the few, and women should not attempt this unless they had confidence in themselves, their apparatus, and their assistants.

Therapeutical Notes.

Mastic Dressings for Wounds.—In a note published in the *Journal de pharmacie et de chimie* comment is made by W. V. Oettingen on the advantages of a solution of gum mastic and linseed oil as a dressing for wounds, based on his own observations during the Russo-Japanese War. Considering it dangerous to do so he never washed out the wounds prior to the application of the varnish, which had the following composition:

℞	Gum mastic,	ʒv;
	Chloroform,	ʒx;
	Linseed oil,	gtt. xx.

Ft. solutio.

This varnish was brushed on the wounded surface and a dressing of absorbent cotton and muslin applied. A fourfold piece of muslin about six inches square is taken and between the folds is placed a layer of absorbent cotton. It is sufficient to apply this dressing on the coating of mastic painted on the wound, and it adheres easily. These dressings are prepared beforehand, and about forty or fifty are sterilized together, taking care to surround them with parchment paper, and closing the packages very carefully when they are removed from the sterilizer.

Ointment of Silver Nitrate.—In a recent issue of the *Monatshefte für praktische Dermatologie* the following formula is published for ointment of silver nitrate:

℞	Olive oil,	℥ii;
	Yellow wax,	℥i;
	Pulverized boric acid,	ʒiiss;
	Silver nitrate,	gr. xv.

M.

The Treatment of Loss of Hair.—Sabouraud (*Bulletin général de thérapeutique;* through *L'Union pharmaceutique,* September, 1910) is quoted as favoring the application of irritants in the treatment of alopecia, and E. Besnier is cited as recommending the daily friction of the bald spots with the following solution applied by means of pledgets of absorbent cotton wetted with it:

℞ Glacial acetic acid, ... ♏xv;
Chloral hydrate, ... gr. lxxv;
Ether, ... ℥i.
Ft. solutio.

Sabouraud very frequently employs the following solution, applied in the same way:

℞ Lactic acid, ... ʒiiss;
Spirit of ether (French Codex), ... ℥ii.
Ft. solutio.

Vidal advises the use of less irritating substances Crystalline carbolic acid and acetic acid should be rejected, as the lively irritation produced by them retards a cure.

The cure of patches in the beard is more difficult than in the case of the scalp. It is preferable to employ a substance that will leave few traces. Sabouraud recommends the application of the following mixture two or three times daily:

℞ Xylol (dimethylbenzene). .... ʒv;
Spirit of ether (French Codex), ... ʒv.
M.

General treatment is as necessary as local treatment. In order to overcome the debility marked by an absence of phosphates in the urine diluted phosphoric acid (U. S. P.) is given in drop doses, ten drops being administered in water twice daily with meals.

Treatment of the Paroxysm in Asthma.—In the course of a comprehensive article on asthma in its various manifestations, P. W. Williams gives in the *Practitioner* for October, 1910, some useful notes on the remedies that are of value in the treatment of the asthmatic paroyxsm. He prefaces several prescriptions with some very sensible remarks on the nature of the attack and the usefulness of the palliative compounds. Remedies which act simply by overcoming the bronchial obstruction only relieve the dyspnœa for the time being, leaving conditions which lead up to the "attack" untouched, hence, being palliatives only, such antispasmodics never *cure,* and leave the patient still predisposed to dyspnœic attacks. That is why the usual "cures" never cure; and once a patient resorts to the use of datura cigarette or burning powder he generally has to keep on using it until it begins to fail, and a fresh remedy of the same nature engages his affections and receives his testimonial. The author does not suggest that palliatives should be discarded, as he considers them essential in most asthmatic attacks, but overcoming an attack is not curing the disease, and to rely on such remedies for permanent improvement is to ensure failure, unless perchance the attacks are due to some transient cause which passes off despite the use of these palliatives.

Referring to remedies employed to ward off an attack, he regards caffeine iodide as the most useful. For patients who cannot take even the smallest amounts of iodide without symptoms of iodism, he gives five or ten grains of calcium chloride before or after the caffeine iodide. (They cannot be dispensed together, as calcium iodide is formed and the calcium has then no controlling influence against iodism.)

Other combinations of value mentioned by the author follow:

I.

℞ Nitroglycerin, ... gr. 1/200 to gr. 1/100;
Sodium iodide, ... gr. iii to gr. v.

One dose to be repeated every two or three hours until the attack subsides.

II.

℞ Sodium nitrate, ... gr. ss to gr. i;
Sodium iodide, ... gr. iii to gr. v.

Give every two or three hours.

III.

℞ Fluid extract of grindelia robusta, .. ♏xv to ♏xxx;
Sodium iodide, ... gr. ii;
Nitroglycerin, ... gr. 1/200;
Tincture of euphorbia pilulifera, ... ♏xx;
Spirit of chloroform, ... ad ʒi.

M. Sig.: One to two teaspoonfuls in water every two to four hours while the attack lasts.

IV.

℞ Fluid extract of grindelia robusta, ... ♏xx;
Fluid extract of myrtus chekan, ... ♏xx;
Fluid extract of yerba santa, ... ♏xx;
Fluid extract of quebracho, ... ʒi.

M. Sig.: One dose to be taken in two teaspoonfuls of brandy in half a tumblerful of water.

Morphine may be given hypodermically in conjunction with hyoscine, as in the following:

℞ Morphine hydrochloride, ... gr. 1/6;
Hyoscine hydrobromide, ... gr. 1/200 to gr. 1/100.

To the foregoing 1/200 grain of nitroglycerin may be added, or atropine sulphate may be substituted for the hyoscine.

As a useful form of vaporized spray solution the author recommends the following:

℞ Cocaine hydrochloride, ... gr. ii;
Atropine sulphate, ... gr. ii;
Sodium nitrite, ... gr. x;
Glycerin, ... ♏xx;
Rose water, enough to make, ... ℥ss.

M. et Sig.: Five or ten minims to be inhaled through the nose by means of a very fine vaporizing spray. Repeat at intervals of twenty to thirty minutes if necessary.

Saline Laxative in Constipation.—The following formula for a saline laxative which is especially recommended in cases of constipation associated with hyperchlorhydria is credited to Hayem in the *Quinzaine thérapeutique* for October 10:

℞ Sodium chloride, ... gr. xv;
Sodium phosphate, ... ℈ii;
Sodium sulphate, ... gr. xlv;
Water, ... Oii.

F. Solutio. Sig.: Take three or four wineglassfuls on rising at intervals of twenty minutes.

Mixture for Coryza.—According to the *Prescriber* for October, 1910, the following prescription has a marvelous effect in cutting short a "cold in the head":

℞ Sodium salicylate, ... ʒi;
Compound tincture of cinchona, ... ʒii;
Aromatic spirit of ammonia, ... ʒii;
Camphorated tincture of opium, ... ʒii;
Tincture of ginger, ... ʒii;
Chloroform water, ... ad ℥vi.

M. et Sig.: One tablespoonful in water three or four times daily between meals.

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NEW YORK, SATURDAY, OCTOBER 29, 1910.

PROTECTIVE INOCULATION AGAINST TYPHOID FEVER.

In view of the limited number of thoroughly scientific reports upon which to base an opinion of the value of this procedure and of its drawbacks, the Carpenter lecture, by Major F. F. Russell, of the Army Medical Corps, delivered at the New York Academy of Medicine on October 20th, should be heartily welcomed.

Cancer research and the great struggle against tuberculous disease have for several years commanded worldwide attention among physicians and laymen alike. It has remained for the military physicians of three nations—Germany, Great Britain, and the United States—to discover and develop a method of combating the worst scourge of war. Even in time of peace typhoid fever is never absent from the ranks, but in war it demands a toll of life far greater than do powder and shot. In the American civil war over 80,000 men died of this disease in the Northern army alone. The troops in the Boer war and Spanish-American conflict were similarly devastated. Eighty-six per cent. of all the deaths in the British South African army were due to typhoid. The mobilization of troops at once raises the morbidity from typhoid full tenfold. Nearly one third of all the men in the field sooner or later become infected. Even under the most ideal conditions of modern camp sanitation this morbidity has been but little reduced. The work necessary to the achievement of victory usually does not permit of the maintenance of these ideal conditions; hence a method of prophylaxis which shall be equally effective under varying conditions is the ideal to be sought for.

Major Russell traced prophylactic inoculation with killed cultures of bacteria down from the original work of Pasteur. He showed that to Sir A. E. Wright, of London, and to R. Pfeiffer belonged the credit of the first inoculation of men against typhoid. In 1896 each inoculated two men, and, although the cases were so few, the scientific study of the results was so careful and complete as to leave but little doubt of the value of the method. Wright then obtained permission to use the vaccine on the British troops in India and South Africa. He found that the incidence of typhoid in the inoculated men was reduced to half that in the others, and the mortality to rather less than half. Much adverse criticism then arose and the procedure was abandoned. Commissions appointed to investigate the whole subject, however, reported so favorably upon every point that the work was resumed in the army under Leishman. Here in the United States Major Russell has been prominent in the work. At the present time large numbers of men in the armies of Great Britain, the United States, and Germany have been inoculated. The minutely detailed and accurate observations made on these men afford a body of facts well nigh conclusive.

The details presented by Major Russell are far too many to be reported here, but some idea of the results may be given. All the men used in the observations were subjected to precisely similar conditions, whether inoculated or not. In our army, among 10,000 inoculated men, there developed only fifty-six cases of typhoid, with five deaths, while 272 cases arose, with forty-six deaths, among 8,000 noninoculated. Nearly all the cases in the inoculated men occurred in those who had had but one injection, and all five deaths were among them. Similar results in the reduction of both morbidity and mortality are seen in the reports from the German and British armies.

These remarkable results are not sufficient to assure the popularity of the procedure, however, if it is associated with much physical distress. Here again in its favor we find that both local and constitutional reactions are very slight in the vast majority of cases. Particularly is this true of women and children, in whom there is often no reaction at all. The reaction begins in from four to six hours after the injection and is usually over in twelve hours more. The symptoms vary from slight headache and malaise, with a little redness and swelling at the site of injection, in the mild case to a severe headache, chills, fever up to 103° F., nausea, vomiting, diarrhœa, pains in the extremities, and herpes facialis, with a local reaction which may amount to redness, tenderness, and swelling of the whole arm and axillary lymph glands, in the most severe cases. The severe reactions occur in less than one half of one per cent. of cases and soon pass off, leaving no permanent ill effects. A previous attack of typhoid fever seems to cause an aggravated reaction in many cases. Alcohol taken during the time of treatment has a similar effect. No reaction follows the second and third injections as a rule.

The directions for the use of the injections are given by Major Russell as follows: 1. The injection is to be given at 4 p. m.; then the reaction begins at bedtime and is over by morning. 2. Alcohol is to be abstained from on the day of injection. 3. The injection is to be given into the subcutaneous tissue over the insertion of the deltoid. 4. The skin may be prepared as desired—he uses iodine. 5. The first dose is 500,000,000 organisms, or 0.5 c.c. The second and third are twice as large. 6. An interval of ten days is to elapse between doses. The results of the inoculation are uniform in character, but vary in degree. There is a rise of agglutinins in the blood, appearing in six or seven days and usually reaching an index of 1 in 6,000. They have been known to rise as high as 1 in 20,000 in a number of cases. This increase in agglutinins persists from six months to a year or more, disappearing very gradually. There is an increase in the opsonins which begins a few days later—the seventh to eighth—does not rise so high, and falls somewhat more rapidly. After each injection there is a leucocytosis of about 15,000 which disappears in about ten days.

Major Russell was able to give a satisfactory explanation of the failure of some of the earlier preparations to act on the ground that they were chemically changed by too great heat. He now keeps them heated to 53° C. for an hour, to destroy the bacilli, and gets uniform results. He also conclusively refuted Wright's early idea of a "negative phase," and showed that at no time after an inoculation was the resistance to typhoid infection reduced below normal. On the contrary, in the least responsive cases there is always an immediate increase in the resistance.

From an analysis of the results obtained in the armies of Germany, Great Britain, and the United States we find that inoculation against typhoid fever undoubtedly diminishes the susceptibility to the disease; that it decreases the mortality in those who do become infected; that it protects regardless of hygienic surroundings; that its protective effects last many months; that it is easily carried out and is only rarely associated with unpleasant symptoms; that there is no evidence in experience for the belief that it even temporarily increases the susceptibility to the disease; and, lastly, that no untoward results have as yet been seen. If under these most severe tests this procedure has produced such uniformly good results, why have we not in it a practicable and effective means of combating typhoid fever in war and in peace? Why should we not look hopefully for the time when its use may be as general as that of vaccination against variola now is?

A THOUSAND AUTOPSIES A YEAR.

In a Harvey Lecture recently given in New York, Professor Chiari, of the University of Strassburg, discussing the importance of the autopsy in medicine, said that a thousand autopsies a year was the average at the German universities. In this country we have long envied our colleagues across the water for the vast pathological material always at their disposal. How often have we not followed carefully the clinical course of a disease, only to be deprived, when the end came, of a much desired autopsy! Conditions in respect to autopsies are with us almost as unsatisfactory as they were a century ago in respect to ordinary dissections. One remedy would appear to lie in properly educating the public concerning the immense importance to them of sufficient opportunity to compare clinical symptoms with autopsy findings. Such education must come mainly from the family practitioners.

The advances in pathology in the past few decades have been so enormous that it is difficult for one mind to master the entire subject. There is a tendency, therefore, to specialization, and a great deal of attention is at present being devoted to experimental pathology. Moreover, voices are being heard saying that the days of anatomical and histological examinations are about numbered, and that to penetrate deeper into the nature of disease new weapons will have to be forged. While not denying the need constantly of the newest methods in studying disease, Chiari made an eloquent plea for the pathological autopsy. It was, he said, still the essential foundation for exact medical knowledge. To obtain the best results, however, it was imperative to work hand in hand with the clinician, and the therapeutic end should never be lost sight of.

In this connection it is interesting to recall Jacobi's description of conditions in Vienna fifty years ago. The brilliant achievements of Skoda in physical diagnosis and of Rokitansky in pathological anatomy had led to a shameful neglect of therapeutics. All was considered to have been done for a patient if his condition had been diagnosticated by Skoda and the diagnosis confirmed by an autopsy made by Rokitansky. Happily, conditions have undergone a marked change. Pathology no longer confines its studies to the dead; one of its chief functions nowadays is to furnish material aid to the clinician in the way of diagnosis and therapeutics.

In Chiari's institute in Strassburg the total number of autopsies in June, 1909, was eighty-seven. Among these were eleven of infants who had died of digestive disturbances; six without pathological alterations in the gastrointestinal canal (autointoxication) and five with pathological changes. It is apparent that if methods could be devised to recognize the former group of cases during life, it might be possible to save a considerable number of children each year. There were two cases of status lymphaticus, both in patients who had died during chloroform anæsthesia. Here, again, some means must be found to detect this condition more easily during life.

A PHYSICIAN'S USEFUL AVOCATION.

Some avocation is taken up by almost every busy practitioner. It may be music, painting, shooting, fishing, or some game of skill or chance. Whatever it is, it is tolerably sure to prove beneficial to the man who pursues it, but not to others except in so far as, by endowing him with fresh energy, it enables the physician to perform his professional duties with additional thoroughness. Occasionally, however, a member of our profession chooses an avocation which is more obviously conducive to the satisfaction of others. That has been the case with one of our eminent New York ophthalmologists, Dr. George T. Stevens, who has made the practical study of botany his diversion and has recently furnished us with a valuable book on the subject.*

Dr. Stevens first gives an outline of structural botany, and then devotes the bulk of the book to the special flora of the region with which he is dealing. The whole is written in language which any person of ordinary education can readily understand, and this fact constitutes the charm of the work. Many of us "botanized" in our youth, but have now forgotten even the little knowledge of botany which would enable us to analyze a plant. From Dr. Stevens's book one may easily renew his acquaintance with the science, and it should be the field companion of such of us as are privileged to roam the fields and woods for a portion of the year. Besides the attractiveness of botany in itself, it seems to us, there is some advantage in a physician's knowing something of the structure and affinities of medicinal plants. With Dr. Stevens's brief descriptions and his vivid drawings, one ought to have no difficulty in freshening his acquaintance with such details.

The 749 pages of the book are crammed with condensed matter, but the author has occasionally allowed himself to go beyond the strictly technical. For example, he says of *Rhus toxicodendron:* "A pernicious species which is too often permitted to grow to the detriment of the health of many people, even when not poisoned by contact. Many persons living in neighborhoods where this vine is tolerated become ill from obscure nervous troubles which are often considered as malarial, and the value of property is in such places reduced, since the localities acquire the reputation of being 'malarial.'" That is a matter, we might suggest, for the neurologists to take up. Again, he remarks concerning *Linnæa borealis:* "This little plant was a favorite with the great Linnæus, and it was dedicated to and named after him by Gronovius, a distinguished Dutch botanist and friend of Linnæus."

OUR FEDERAL SANITARY SERVICE.

The Treasury Department has done well to reprint in the form of a pamphlet the paper, entitled The Present Organization and Work for the Protection of Health in the United States, read by Surgeon General Walter Wyman, of the United States Public Health and Marine Hospital Service, at the recent annual meeting of the American Public Health Association. It is to be feared that but few of our citizens, even of those who belong to the medical profession, realize the vast extent and varied character of the work done by the bureau or the excellence of its administration, and this pamphlet ought on that account to be widely circulated.

The activities of the bureau are not confined to our home territory or even to our detached possessions along with it; in various parts of the world over which we have no jurisdiction the bureau's officers are constantly on the watch to guard against the transfer of loathsome and dangerous communicable diseases to our shores. This of course is but a small part of the labors undertaken by the service, but it is one of the most important phases of the work. Added to it are the inspection of immigrants, maritime and interstate quarantine, investigations into matters thought to have an influence on the public health, the extermination of animals concerned in the dissemination of disease, and other important tasks. The value of the bureau's work cannot be overestimated.

An Illustrated Guide to the Flowering Plants of the Middle Atlantic and New England States (Excepting the Grasses and Sedges). The Descriptive Text Written in Familiar Language. By George T. Stevens, M.D., Ph.D. With more than 1,800 Illustrations from Drawings by the Author. New York: Dodd, Mead, & Co., 1910.

News Items.

Changes of Address.—Dr. Ross McPherson, to 20 West Fiftieth Street, New York.

Dr. Harry G. Watson, to 78 Irving Place, New York.

A Correction.—Dr. Achilles Rose calls our attention to an error in his letter which appeared in our last issue, on page 841, *γρὰμμα* having been printed instead of *γραμμὴ*.

The American Association of Railway Surgeons held its annual meeting in Chicago on October 19th, 20th, and 21st, under the presidency of Dr. H. C. Fairbrother, of East St. Louis.

An International Conference on Cholera Proposed.—The International Bureau of Public Hygiene recommends the calling of an international sanitary conference for the purpose of discussing plans to combat the cholera epidemic.

The Southern Medical Association will meet in annual session in Nashville, Tenn., on November 8th, 9th, and 10th, under the presidency of Dr. W. W. Crawford, of Hattiesburg, Miss. Dr. Oscar Dowling, of Shreveport, La., is secretary.

The Association of Military Surgeons will meet in annual session in Richmond, Va., on November 1st to 4th, under the presidency of Colonel J. K. Weaver, of Norristown, Pa. Major Charles Lynch, of Washington, D. C., is secretary of the association.

The Manhattan Eye, Ear, and Throat Hospital to be Enlarged.—A plot of land, 100.5 by 130 feet, at the southeast corner of Third Avenue and Sixty-fourth Street has been purchased by the Manhattan Eye, Ear, and Throat Hospital. This property will be used for enlarging the hospital.

The Harvey Society Lectures.—As announced in our last issue, the second lecture of the course for 1910-11 will be delivered by Professor W. E. Castle, of Harvard University, on Saturday evening, November 5th, at 8:30 o'clock, in the Academy of Medicine. The subject will be Unit Characters in Heredity.

The Detroit Otolaryngological Society held its first meeting in the Wayne County Medical Society Building, Detroit, recently, and elected the following officers: President, Dr. E. L. Shurly; secretary and treasurer, Dr. Emil Amberg. Dr. Shurly delivered an address on Broader Conceptions in Specialism.

The Holyoke, Mass., Medical Association met on Wednesday evening, October 5th, and elected the following officers: President, Dr. Thomas E. Cavanaugh; vice-president, Dr. George D. Henderson; secretary and treasurer, Dr. G. C. Robert; executive committee, Dr. J. H. Potts, Dr. J. J. Carroll and Dr. G. L. Taylor.

The University of Wisconsin.—The new biological building of the university has been begun. The structure will occupy a space forty-two by two hundred and forty-two feet, will be built of Madison sandstone, and will follow the general style of architecture of the University Hall. It will be four stories in height, with basement and subbasement.

The Chair of Genitourinary Surgery of the Philadelphia Polyclinic.—At the last meeting of the faculty of the Philadelphia Polyclinic and College for Graduates in Medicine, held on October 17th, Dr. Benjamin A. Thomas was unanimously recommended to the Board of Trustees as a candidate for the Chair of Genitourinary Surgery; and at a meeting of the board held the following day, Dr. Thomas was elected to the chair.

Personal.—Dr. Herbert E. Baright has been appointed associate physican to the Saratoga Springs Sanatorium, Saratoga, N. Y., of which Dr. S. E. Strong is president.

Dr. C. C. Haskell, of Indianapolis, has returned home, after having spent some months in studying the diseases of infants in New York hospitals.

Dr. Woods Hutchinson, of New York, delivered an address on The Price of Sunshine, on Saturday evening, October 22d, in Louisville, Ky., under the auspices of the Louisville Antituberculosis Association.

Miss Mabel Macher, of Philadelphia, a graduate nurse of Bryn Mawr Hospital, will leave on December 1st for China, where she will become head nurse of the University of Pennsylvania Medical School, in Canton.

Infantile Paralysis in New York State.—According to a report recently issued by the State Commissioner of Health, there have been 146 cases of infantile paralysis in New York State since May. Of these, 31 resulted fatally. During September, 92 cases were reported, with 16 deaths. So far this month there has been a decrease in the number of cases reported.

Endowment Fund for Western Reserve University.—Announcement is made that Mr. John D. Rockefeller will give to the university for the further endowment of its medical department the sum of $250,000, on condition that $750,000 additional is raised. As was stated some time ago, Mr. H. M. Hanna, of Cleveland, has given $250,000 toward the fund. The trustees of the university will make an effort to secure the $500,000 needed to complete the fund.

A Reception to Dr. Sajous.—The officers and fellows of the Manhattan Medical Society tendered a reception to Dr. Charles E. de M. Sajous, of Philadelphia, at the society's hall, Reisenweber's Café, New York, on Friday evening, October 28th. An interesting paper was read by Dr. Sajous entitled The Adrenals in their Relation to General Diseases and their Treatment. Dr. Heinrich Stern is president of the society and Dr. Ross McPherson is secretary.

A Milk Commission in Philadelphia.—Acting upon a suggestion made by the bureau of municipal research through Director Neff, of the department of health and charities, Mayor Reyburn on October 24th named a commission to investigate the milk supply of the city and to suggest legislation or other means for its improvement. The members of the commission are: Dr. C. Lincoln Furbush, chairman; Dr. Charles B. Penrose, Dr. Henry Leffman, Dr. Randle C. Rosenberger, Dr. Clarence J. Marshall, and Dr. Samuel McC. Hamill.

The New Hampshire Surgical Club.—The fifteenth annual meeting of this organization was held at Dartmouth Medical College, Hanover, on Wednesday, October 5th. Members of the club came from all over the State to attend the meeting. In the afternoon a programme of scientific papers was presented, followed by the election of officers, and in the evening the annual banquet was held. The new officers are: President, Dr. J. W. Staples, of Franklin; vice-president, Dr. C. S. Abbott, of Laconia; treasurer, Dr. Frank E. Kittredge, of Nashua.

Philadelphia County Medical Society.—At a meeting of the society held on Wednesday evening, October 19th, it was decided to submit to a referendum vote by mail the question of remaining in the present headquarters, in the College of Physicians' Hall, Twenty-second and Ludlow Streets, or getting a building of its own. Among those nominated for office were: Dr. C. L. Longenecker and Dr. Charles E. Burr, for President; Dr. L. Jay Hammond, vice-president; Dr. William S. Wray, secretary; Dr. Alexander R. Craig, assistant secretary, and Dr. Collier L. Bower, treasurer.

The Colorado State Medical Society.—At the annual meeting of this society, held in Colorado Springs, on October 11th, the following officers were elected: President, Dr. Will Howard Swan, of Colorado Springs; first vice-president, Dr. T. E. Carmody, of Denver; second vice-president, Dr. M. J. Keeney, of Pueblo; third vice-president, Dr. Samuel French, of Meeker; treasurer, Dr. George W. Miel, of Denver; councilors, Dr. Edgar Hadley, of Telluride; Dr. Charles F. Gardiner, of Colorado Springs; Dr. Edward A. Whitmore, of Leadville; Dr. Jacob C. Chipman, of Sterling.

Baltimore Medical College Alumni Banquet.—The first annual reunion and banquet of the New York State Alumni of the Baltimore Medical College was held in the Onondaga Hotel, Syracuse, N. Y., on Wednesday evening, October 19th. Dr. Emory Ward Carr, of Lyons, was toastmaster. Dr. J. M. A. Rowland, of Baltimore, was the first speaker, and others who spoke were Dr. George E. Stephenson, of Penn Yan; Dr. Frank E. Fox, of Fulton; Dr. Leon P. Janiewicz, of Utica; Dr. Myron D. Lipes, of Cobleskill; Dr. Don U. Gould, of Sherburne; Dr. William P. Peckham, of Utica, and Dr. Morley B. Lewis, of Sag Harbor. The officers elected were: President, Dr. Milton E. Gregg, of Elbridge; vice-president, Dr. Morley B. Lewis, of Sag Harbor; secretary-treasurer, Dr. W. J. R. MacFarland, of Syracuse; Executive Committee, Dr. W. D. Peckham and Dr. Leon P. Janiewicz, of Utica, Dr. Lewis and Dr. MacFarland.

Buffalo Academy of Medicine.—On Tuesday evening, October 25th, a meeting of the Section in Surgery was held. The principal feature of the programme was a paper by Dr. F. F. Simpson, of Pittsburgh, Pa., entitled The Choice of Time for Operation in Pelvic Inflammation of Tubal Origin, which was discussed by Dr. S. Y. Howell. On Tuesday evening, November 1st, the Section in Surgery will meet. A paper will be read by Dr. Roswell Park, followed by a general discussion.

Ether Day was observed at the Massachusetts General Hospital, Boston, on Saturday, October 15th. Ether was first used as an anæsthetic in that hospital sixty-four years ago, and the anniversary was celebrated. In the forenoon a special clinic for the postgraduates of the hospital was held, followed by a luncheon. Dr. Henry P. Walcott, chairman of the board of trustees of the hospital, presided at the exercises held in the afternoon. Dr. George W. Crile, of Cleveland, was the principal speaker.

Medical Association of the Southwest.—The fifth annual meeting of this society was held in Wichita, Kansas, on October 11th and 12th, under the presidency of Dr G. H. Moody, of San Antonio, Texas. Addresses of welcome were delivered by the Hon. C. L. Davidson, Mayor of Wichita; Dr. O. P. Davis, president of the Kansas State Medical Society, and Dr. E. J. Oldham, of Wichita, which were responded to by Dr. J. Becton, of Greenville, Texas. The following officers were elected for the ensuing year: President, Dr. M. L. Perry, of Parsons, Kansas; vice-president for Arkansas, Dr. John M. Griffin, of Sulphur Springs; vice-president for Missouri, Dr. W. H. Stauffer, of St. Louis; vice-president for Oklahoma, Dr. E. S. Lain, of Oklahoma City; vice-president for Texas, Dr. W. L. Allison, of Fort Worth; secretary and treasurer, Dr. F. H. Clark, of El Reno, Okla. Oklahoma City was selected as the place for holding the meeting in 1911.

Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $180, will be made on July 14, 1911, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the secretary of the college on or before May 1, 1911. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga Prize for 1910 has been awarded to Dr. M. Katzenstein, of Berlin, Germany, for his essay entitled The Formation of an Arterial Collateral Circulation in the Kidney.

Syracuse University College of Medicine.—Certain changes in the course of instruction for the year 1910-11 have been inaugurated at the College of Medicine of Syracuse University. The course in anatomy will be conducted by Professor Henry W. Stiles, of Tulane University, New Orleans, who will be assisted by Dr. Robert H. Haskell, of the University of Michigan. The course in anatomy will, in future, be completed in one year, thus affording an opportunity for a course in applied anatomy during the second year. Professor H. Burton Doust will have charge of the department of materia medica, Professor Curtin having been transferred to the department of internal medicine. The course in obstetrics has been rearranged. Professor Hotaling will take charge of the work in the junior class, and Professor Belknap, who has charge of the clinical work, will direct the work of the seniors. The work in operative surgery will be conducted by Dr. Palmer, Dr. Wiseman having been transferred to the department of medicine. Dr. Weiskolten has been added to the department of pathology and bacteriology. A course in post mortem examinations has been included in the work of this department. Other changes in the faculty include the transference of Dr. Post to the department of medicine, as assistant to Dr. Elsner, and the transference of Dr. Kline to the department of laryngology, to assist Dr. Halsted.

Vermont State Medical Society.—The ninety-seventh annual meeting of the Vermont State Medical Society was held in St. Albans on Thursday and Friday, October 13th and 14th, under the presidency of Dr. W. L. Havens, of Chester Depot. There was a large attendance, and the meeting was in every way a success. The programme was elaborate and of exceptional excellence. Burlington was selected as the place for the next annual meeting, and the following officers were elected: President, Dr. H. C. Tinkham, of Burlington; vice-president, Dr. S. W. Paige, of St. Albans; secretary, Dr. C. H. Beecher, of Burlington; treasurer, Dr. B. H. Stone, of Burlington; auditor, Dr. A. M. Norton, of Bristol. Dr. J. P. Gifford, of Randolph, was elected president of the House of Delegates; Dr. W. W. Townsend, of Rutland, first vice-president; Dr. F. T. Gartland, of White River Junction, second vice-president, and Dr. Lyman Allen, of Burlington, secretary.

The Central New York Medical Association.—The forty-second annual meeting of this organization was held in Syracuse, on Thursday, October 20th, under the presidency of Dr. F. W. Sears, of Syracuse. The Fifth District Branch of the Medical Society of the State of New York held its fourth annual meeting at the same time, and on Thursday evening a joint banquet of the two societies was held in the Onondaga. Among the speakers were Dr. William H. Welch, of Baltimore, and Dr. John Marshall, of the United States Army. Dr. Wesley T. Mulligan was elected president of the Central New York association, and Dr. Charles O. Boswell, of Rochester, treasurer. The Fifth District Branch of the State Society elected the following officers: President, Dr. Arthur A. Gillette, of Rome; vice-president, Dr. Conway W. Frost, of Utica; secretary, Dr. Frederick H. Flaherty, Syracuse, and treasurer, Dr. H. A. Hoyt, of Watertown. The selection of a place of meeting for next year was left in the hands of a committee.

The Eastern Medical Society, of New York, adopted the following resolutions at a meeting held on October 14, 1910:

WHEREAS, Dr. Abram Brothers, a distinguished and highly respected member of the medical profession, died on the 13th day of October, at an early age and in the midst of a brilliant and most promising career, and

WHEREAS, Dr. Abram Brothers was one of the founders of the Eastern Medical Society, and at one time the presiding officer, and during his connection with this society had contributed greatly to its scientific and social usefulness and success,

Resolved, That we, the members of the Eastern Medical Society express our feeling of deep regret and heartfelt sorrow at his untimely departure. In his death the Eastern Medical Society has lost one of its most honored and beloved former members, the science of medicine a most earnest and exceptionally gifted worker and the cause of charity and humanity a true and enthusiastic friend,

Resolved, That we extend our condolence to the family of Dr. Abram Brothers in their bereavement, and that these resolutions be transmitted to the grief stricken family and spread on the minutes of this society, and published in the medical journals.

D. Robinsohn, M.D.,
A. E. Isaacs, M.D.,
M. Cisin, M.D.,
Committee on Resolutions.

Resolutions on the Death of Dr. Abram Brothers.—The medical board of the Beth Israel Hospital, New York, at a special meeting, held on October 14, 1910, unanimously adopted the following resolutions:

WHEREAS, After a period of deep anxiety and hopefulness for the recovery of our esteemed colleague, Dr. Abram Brothers, the sad tidings have reached us that death has claimed and taken him from among us, and

WHEREAS, Dr. Abram Brothers, who in the many years of our mutual contact, became so endeared to us by reason of his sterling qualities as a man, his earnestness as a colleague, his devotion to his profession and contribution to its progress, should have been taken from us at the height of a successful career, made so by his own efforts and ability, and which we had hoped to see continued that he might live to enjoy the retrospect, and see the fruits of his self sacrificing labor and of the energy that he gave to the cause of humanity, therefore be it

Resolved, That we give expression to the feelings of heartfelt sorrow that overwhelm us on the occasion of his untimely death; that we feel that, by his departure in the prime of life and in his uncompleted career, the cause of humanity has lost an ardent advocate, the science of medicine a brilliant contributor, and the Beth Israel Hospital an earnest and able worker, and be it further

Resolved, That we extend our most sincere condolence to his sorrowing family in this time of their sad affliction, for their grief is great in the loss of so loving a husband and devoted a father, who will live in their memory as love and goodness, and with us in his deeds and accomplishments, and be it further

Resolved, That a copy of these resolutions be spread on the minutes of this board, that a copy be sent to the bereaved family and that copies be forwarded to the medical press for publication.

Archibald E. Isaacs,
David Robinsohn,
Felix Cohn,
Committee on Resolutions.

Vital Statistics of Minneapolis.—During the month of September, 1910, the number of deaths from all causes reported to the department of health numbered 295, corresponding to an annual death rate of 9.79 in a thousand of population. There were 21 stillbirths, 21 males and 9 females. The deaths of children under five years of age numbered 81, of whom 68 were under one year of age. Five hundred and thirty-three births and 366 marriages were reported during the month.

The Mortality of New Orleans.—According to the official report of the Board of Health of the City of New Orleans, there were reported during the month of September, 1910, 504 deaths, exclusive of stillbirths, 290 white and 214 colored. The stillbirths numbered 55, 27 white and 28 colored. The annual death rate in a thousand of population was 12.79 for the white population, 24.38 for the colored, and 16.21 for the total white and colored. The deaths of children under five years of age numbered 87, of whom 66 were under one year of age.

Health Officers' Conference.—It has been decided to hold the 1910 Conference of Sanitary Officers of the State of New York at Buffalo on November 15th, 16th and 17th. The sessions will be held in the public hall of the Y. M. C. A. building on Main street. The programme is not completed in detail. As it exists in the rough it provides a day to be given over to the discussion of the relationship existing between health departments and the various elements of society, a day devoted to communicable diseases, and separate sessions for the consideration of certain problems affecting city and rural health officers respectively. There will also be an evening public meeting.

The Health of Philadelphia.—During the week ending September 17, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 55 cases, 9 deaths; scarlet fever, 14 cases, 0 deaths; chickenpox, 1 case, 0 deaths; diphtheria, 56 cases, 5 deaths; measles, 7 cases, 2 deaths; whooping cough, 21 cases, 4 deaths; pulmonary tuberculosis, 109 cases, 45 deaths; pneumonia, 7 cases, 22 deaths; puerperal fever, 1 case, 1 death; erysipelas, 2 cases, 0 deaths; mumps, 2 cases, 0 deaths; infantile paralysis, 10 cases, 2 deaths; trachoma, 1 case, 0 deaths; hydrophobia, 1 case, 1 death. There were 6 deaths from tuberculosis other than that of the lungs, 1 from dysentery, and 45 from diarrhœal diseases under two years of age. There were 44 stillbirths: 25 males and 19 females. The deaths from all causes numbered 418, in an estimated population of 1,598,400, corresponding to an annual death rate of 13.59 in a thousand of population.

Resolutions Adopted by the Women's Prison Association.—At a meeting of the representatives of between forty and fifty organizations, held in New York on October 14th, under the auspices of the Women's Prison Association, the following resolutions were adopted after a discussion of the clause of the Page commission bill which deals with the medical examination of prostitutes:

Whereas, The germs causing the venereal diseases are no longer matters of uncertainty, but have been perfectly and conclusively demonstrated by medical science, and

Whereas, The favorable breeding conditions and modes of transmission of these germs are also thoroughly understood by the medical profession, and

Whereas, The method of attempting to check the spread of venereal diseases by systematically hunting down certain classes of women only has survived from a period when the germs of these diseases were yet undiscovered and their modes of transmission therefore not certainly demonstrable, and

Whereas, A legislative mandate to continue so crude and barbarous a method of attacking any infectious or contagious disease is an offence against scientific truth and an indignity to the medical profession, an insult upon women and a slur upon the intelligence of the public, therefore be it

Resolved, That health boards should place the venereal diseases upon the same status as all other contagious, infectious, or communicable diseases, should take the same measures against them, irrespective of class or sex, as are applied in the prevention of all other contagious, infectious, or communicable diseases, and should conduct in respect to them the same policy of instruction of the public as to the preventability of these diseases as is now conducted in respect to others: and be it further

Resolved, That public authorities should make ample provision for the full and sufficient, free, voluntary treatment of patients suffering from venereal disease.

(Signed)

The Publication Committee of the Allied Organizations of Women.
M. C. Walker,
Alice L. Woodbridge,
Jane D. Berry, M. D.,
Lavinia L. Dock, R. N.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending October 22, 1910:

	October 15th.		October 22d.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	492	153	515	163
Diphtheria and croup	222	10	253	18
Measles	67	2	75	2
Scarlet fever	88	1	90	3
Smallpox	..	..	..	..
Varicella	17	..	44	..
Typhoid fever	149	20	108	20
Whooping cough	19	5	24	2
Cerebrospinal meningitis	3	5	2	2
Total	1,057	196	1,111	210

Society Meetings for the Coming Week:

Tuesday, *November 1st.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity; Long Island, N. Y., Medical Society; Bridgeport, Conn., Medical Association.

Wednesday, *November 2d.*—Society of Alumni of Bellevue Hospital; Harlem Medical Association; Psychiatrical Society of New York; Elmira, N. Y., Academy of Medicine.

Thursday, *November 3d.*—New York Academy of Medicine; Dansville, N. Y., Medical Association.

Friday, *November 4th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn, N. Y.; Manhattan Clinical Society; Practitioners' Society of New York.

The Health of Chicago.—During the week ending October 15, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 73 cases, 12 deaths; measles, 12 cases, 0 deaths; whooping cough, 14 cases, 2 deaths; scarlet fever, 79 cases, 5 deaths; diphtheria, 163 cases, 15 deaths; chickenpox, 15 cases, 0 deaths; tuberculosis, 165 cases, 78 deaths; pneumonia, 35 cases, 68 deaths; cerebrospinal fever, 1 case, 0 deaths. There were 2 cases of diarrhœal diseases and 29 cases of contagious diseases of minor importance reported, making the total number of cases reported 588, as compared with 523 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 71, and there were 23 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 163, of whom 114 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 553, corresponding to an annual death rate of 13.2 in a thousand of population, as compared with a rate of 13.4 for the preceding week and 13.2 for the corresponding period last year.

Vital Statistics of New York.—During the week ending October 8, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,333, corresponding to an annual death rate of 14.48 in a thousand of population, as compared with a rate of 15.28 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.50; the Bronx, 18.04; Brooklyn, 13.67; Queens, 14.11; Richmond, 12.05. There were 114 stillbirths. The deaths of children under five years of age numbered 469, of whom 362 were under one year of ago. There were 12 deaths from suicide, 4 from homicide, and 67 due to accidents.

During the week ending October 15th, the deaths from all causes numbered 1,291, corresponding to an annual death rate of 14.02 in a thousand of population, as compared with a rate of 15.13 for the corresponding week in 1909. The annual death rate for the week is each of the five boroughs was as follows: Manhattan, 14.53; the Bronx, 15.07; Brooklyn, 13.55; Queens, 10.13; Richmond, 16.87. There were 135 stillbirths. The deaths of children under five years of age numbered 419, of whom 330 were under one year of age. There were 14 deaths from suicide, 8 from homicide and 80 due to accidents.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

October 20, 1910.

1. The Technique of Arthrotomy. A Report upon and Discussion of One Hundred and Ninety-Eight Cases, By CHARLES F. PAINTER and ANDREW P. CORNWALL.
2. The Small Fibrous Prostate, By ARTHUR L. CHUTE.
3. Analysis of Wound Infection in One Thousand Consecutive Clean Operative Cases, By W. P. GRAVES.
4. The Comparative Histology of Femoral Bones, By J. S. FOOTE.

2. **The Small Fibrous Prostate.**—Chute says that the occurrence of several cases of small fibrous prostate relatively recently has directed his attention especially to this subject and has impressed upon him the fact that this type differs in certain respects from the large prostate that we commonly see. The actual dangers to life are the same as those seen in the hypertrophic gland, but the findings on examination, and the treatment these prostates require, should place them in a class by themselves. These obstructive prostates show upon the rectal examination little, if any, increase in size of the gland. These prostates are dense and fibrous, showing little similarity to the large hypertrophic prostates. They are the result of an inflammatory process. Their recognition before there is an appreciable residual may be difficult. They are often associated with a contraction of the bladder neck or a bar at the bladder outlet. In order to give these patients relief it is important not to overlook either element of the obstruction. The suprapubic enucleation and the median perineal operation are unsuited for treating this type of obstruction. The transverse perineal operation with some alterations is the one best suited for dealing with this condition.

3. **Analysis of Wound Infection.**—Graves analyzes 1,000 consecutive, clean operative cases as to wound infection. He says that in common with other surgeons he has noted that wound infection is much more common in public hospital work than in private practice, where it is almost *nil*. This cannot be due to infection from other septic cases. At the Free Hospital the number of acute septic cases operated in is no greater than at a private hospital. Moreover, in our public hospitals, all the conditions for systematic avoidance of sepsis are superior to those found at the average private hospital. One is, therefore, driven to the conclusion that the difference is largely due to the personal equation of the patient, and that the person whose skin is habitually clean is far less likely to incur wound sepsis. This is a most important fact and establishes the principle that the preparation of public hospital cases must be much more rigorous than that employed for private cases.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 22, 1910.

1. Certain Popular but Erroneous Notions Concerning Angina Pectoris, By JAMES B. HERRICK.
2. Visceral Anæsthesias of Tabes Dorsalis in Relation to the Diagnosis of Acute Inflammatory Conditions in the Abdomen, By LEWIS A. CONNER.
3. Teaching the Principles of Surgery, By MARTIN B. TINKER.
4. Compression of the Spinal Cord Causing Paraplegia, and Its Surgical Treatment, By A. PRIMROSE.
5. Traumatic Facial Paralysis. Anatomosis of Facial Nerve to Spinal Accessory, By W. W. GRANT.
6. Intestinal Obstruction Due to Ascaris Lumbricoides with Necropsy, By CHARLES WHELAN.
7. A Simple and Efficient Means of Applying Artificial Heat, By STEPHEN E. TRACY.
8. A Case of Foreign Body Calculus, By I. S. HIRSCH.
9. The Submucous Resection of the Nasal Septum, By CLYDE E. PURCELL.
10. Results of the Operation of Submucous Resection of the Septum in Private Practice, By FRANCIS P. EMERSON.
11. Surgery of Cystic Degeneration of the Kidney, By T. C. WITHERSPOON.
12. The Nutrition of the Feeble Infant, By HENRY DWIGHT CHAPIN.
13. The Prognosis in Congenital Dislocations of the Hip, By EDWARD H. OCHSNER.
14. Radioactivity Induced by X Ray, By HELIODOR SCHILLER and PATRICK S. O'DONNELL.
15. Bites from Copperhead Snakes, By GILMAN R. DAVIS.

1. **Angina Pectoris.**—Herrick says that with "true," organic cardiovascular angina pectoris there cannot always be made out peripheral arteriosclerosis, cardiac hypertrophy, and high blood pressure. The finding of aneurysm or lesion of the aortic valves does not exclude angina, but rather argues in its favor. The attacks are not always few in number and brief in duration; they do not occur solely after exertion. While the prognosis is grave, life is not necessarily limited to a few months. The disease is by no means to be excluded because the symptoms are found in a woman, even in a nervous or hysterical woman. The pain is not necessarily severe; it may be mild or even lacking; its radiation is variable. The statement that the patient is always conscious, that he is always immobile and erect must be modified so as to read "usually" instead of "always." Eructations or vomiting during an attack do not argue conclusively against the cardiovascular origin of the angina. It is not correct to look on the nitrites as of no benefit in relieving symptoms; nor, on the contrary, is one justified in concluding that a case unrelieved by nitrites is not angina. Digitalis is not necessarily contraindicated; it is often of very great value.

6. **Intestinal Obstruction Due to Round Worms.**—Tracy reports a case of fatal obstruction of the round worms in the jejunum of a child, five and a half years of age. It demonstrates the fact, he says, that the round worm is at least worthy of consideration as an ætiological factor in the production of bowel obstruction in children. It also shows that no cautious surgeon should neglect the statement of an anxious mother that "the baby has worms" in looking for an explanation of the cause of trouble in certain obscure abdominal cases occurring during childhood. Then, perhaps, fewer certificates would be issued giving the cause of death as intestinal paresis superinduced by toxæmia.

MEDICAL RECORD

October 22, 1910.

1. Postprostatic Cystotomy, By EUGENE FULLER.
2. Manic Depressive Insanity and Dementia Præcox, By CHARLES G. WAGNER.
3. Postscarlatinal Anuria for Five Days in a Boy of Three and a Half Years; Recovery, By W. P. NORTHRUP.
4. Remarks on the History of Forensic Medicine from the Renaissance to the XIX Century, By CHARLES GREENE CUMSTON.

5. The Hospital Treatment of Nervous Diseases, By PEARCE BAILEY.
6. Constipation and Toxæmia, By J. GEORGE SAUER.
7. Abscess in the Frontal Lobe of the Brain after Chronic Frontal Sinusitis; Erysipelas in Conjunction with Acute Mastoiditis, By ALFRED WIENER.
8. The Lodge Practice Evil of the Lower East Side, By MORRIS JOSEPH CLURMAN.
9. The King's Evil, By HORACE GREELEY.
10. A Case of Tetanus Successfully Treated with Magnesium Sulphate, By CHARLES D. FOX.
11. Guide for the Lateral Sinus Line, By EMIL AMBERG.

2. **Dementia Præcox.** — Wagner defines dementia præcox, a designation introduced into medicine by Kraepelin, of Munich. Kraepelin observed that there were certain features common to many of the so called terminal dements which exist from the very beginning of all cases that ultimately deteriorate. Briefly stated, these signs are the appearance of negativism or senseless resistance to all external influences; stereotypy or movements of monotonous and meaningless character, *e. g.*, walking in a small circle or square, combing the hair without a comb, washing the hands without water. etc., mannerisms and what the Germans call Willensstörung or impaired volition, and mutism or refusal to speak. All of these are significant symptoms. Memory and orientation are usually good, but delusions and hallucinations are commonly present in these cases and judgment is always defective, but the existence of negativism, stereotypy, mannerisms, mutism, and inhibition of the will are the features on which an early diagnosis of dementia præcox is to be made. Dementia præcox now includes what was formerly known as hysterical insanity—the chronic manias and melancholias and nearly all of the paranoias that were once so common. Three forms of dementia præcox are usually recognized: they are simple dementia præcox without delirium; dementia præcox of the catatonic form, and dementia præcox of the delusional form. In simple dementia præcox without delirium there is mental deterioration without delusions but with more or less marked change in disposition. The change develops gradually and for a long time may be unnoticed. An individual previously intelligent, active, and industrious becomes indifferent and indolent. His mental field becomes more and more contracted and his stock of ideas grows steadily smaller. In the catatonic form of dementia præcox the normal will is paralyzed and automatic acts supervene. Two phases are met with, viz.: catatonic excitement and catatonic stupor. In the former state the excitement is emotionless, unaccompanied by delusions as a rule, and influenced by external impressions. Such patients yield to sudden unreasoning impulses, as the breaking of furniture, throwing objects violently across the room, calling loudly for food when a tray with the food called for is immediately before them. Such patients will walk to and fro over a limited space for hours at a time. Delusions and hallucinations are rare. In the stuporous phase of catatonia there is profound disorder of consciousness, but as a rule the patient, although apparently dead to his surroundings, notes with surprising keenness what takes place about him. His lack of response or reaction is due entirely to a disorder of his will power. Negativism, stereotypy, and pathological suggestibility are prominent features of the symptom complex, and echolalia and echopraxia are also frequently present. These stuporous patients will often lie in bed for months or even years, soiling themselves and requiring the constant care and attention of a nurse. In dementia præcox of the delusional form the delusions are often accompanied by hallucinations and follow one another rapidly without any connection or goal idea, or any attempt on the part of the patient to explain them. In other cases the delusions are more or less systematized about some dominant idea, and to this type the term "paranoid dementia" is often applied.

4. **Forensic Medicine.**—Cumston gives a review of the history of forensic medicine from the Caroline Constitution (1532) to the nineteenth century.

7. **Erysipelas in Conjunction with Mastoiditis.**—Wiener reports a case, which is of interest on account of the presence of a mastoiditis during an attack of erysipelas. An operation was urgently demanded. In spite of the fact that such an operation was done within the erysipelatous area, not the slightest disturbance in the way of any serious complication occurred. We are all of us aware of what a treacherous complication erysipelas is in the presence of a wound; how one serious complication after another will attend such an infection. The result goes to show that the idea of an erysipelas exerting a curative effect upon some wounds, as acknowledged by some authors, is not altogether wrong.

10. **Magnesium Sulphate in the Treatment of Tetanus.**—Fox reports a case of tetanus in a boy, twelve years of age. Antitetanic serum injections were given without success. As the patient continued to grow worse, and as the serum and hypnotic drugs were failing to control the development of the disease, 2 c.c. of a twenty-five per cent. solution of magnesium sulphate were injected into the spinal canal August 23d, after removal of an equal quantity of cerebrospinal fluid. The effect of this injection upon the pulse and respiration was practically nil. Instead of occasioning an alarming drop in the respiratory rate, such as has occurred in other cases, the respirations increased from 26 to 32, while the pulse remained about the same—120 per minute. Not any immediate effects of this injection were noticeable, but four hours after the injection the upper and lower extremities were found to have become almost completely relaxed. There was little change, however, in the amount of rigidity of the abdomen and back. Instead of continuing to become worse the patient remained about the same as during the first twenty-four hours after the injection, so that further administration of magnesium sulphate was considered unnecessary. About the seventh day after admission gradual improvement set in, and the serum was discontinued. At the same time the doses of chloral and bromide were progressively decreased so that four days later these, too, were discontinued. At present the patient is entirely well, and will be discharged from the hospital in several days. During the first week in the hospital the patient received 60,000 units of antitetanic serum. Of this 24,000 units were given by the intravenous method, 12,000 were injected into

the spinal canal, and the remainder subcutaneously. Even though intravenous injection of the serum may not possess any therapeutic superiority over the subcutaneous method of administration of this agent yet it has a decided advantage in being much less painful, and in being less apt to be followed by a disagreeable local reaction. As it is difficult to administer an amount of food sufficient to compensate for the excessive waste occasioned by the disease, and as trismus interferes greatly with the ingestion of food, ice cream was found to be a valuable nutriment in this case; particularly as the patient could not tolerate milk.

BRITISH MEDICAL JOURNAL.

October 8, 1910.

1. Hereditary Aspects of Nervous and Mental Diseases, By F. W. Mott.
2. Congenital Pyloric Stenosis, By Robert Hutchison.
3. Prizes and Performances, By S. Squire Sprigge.
4. Woman's Sphere in Medicine, By E. W. Roughton.
5. The Evolution of Surgery, By William Thorburn.

THE SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Section in Medicine.

6. Introductory Remarks by the President, R. W. Philip.
7. Discussion on Acidosis. Introduced by Professor David L. Edsall.
8. Discussion on Chronic Constipation and its Treatment. Introduced by J. F. Goodhart.
9. Aneurysm of the Aorta Communicating with the Superior Vena Cava, By Laurence Humphry.
10. A Case of Acromegaly with Hypertrophied Heart; Pressor Substances in the Urine, By Laurence Humphry and W. E. Dixon.
11. Evolution of Racial Types of Europe: Its Bearing on the Racial Factor in Disease, By J. S. Mackintosh.
12. Starvation and Purgation in the Relief of Disease, By G. Guelpa.
13. The Injection Treatment of Neuralgia and Sciatica, By Wilfred Harris.
14. The Effects of Electrical Currents upon Blood Pressure, By Ettie Sayer.
15. Tuberculin in Pulmonary Tuberculosis, By W. Camac Wilkinson.

Section in Surgery.

16. Discussion on the Operative Treatment of Simple Fractures. Introduced by W. Arbuthnot Lane.
17. A New Trephine, By Dr. de Martel.

2. **Congenital Pyloric Stenosis.**—Hutchison says that in congenital pyloric stenosis drugs are of little help. He has tried most of them—alkalis, on the assumption that there is excessive acidity of the gastric contents; atropine and bromides as antispasmodics, carminatives, and antiseptics—but the only one which has ever seemed to be of any use is opium. It may be given in minute doses (1/20 minim before each feed), and seems sometimes to help in allaying the vomiting, besides diminishing restlessness and promoting sleep, but he believes one can get on quite well without it. It is more highly esteemed in Germany than it is in England, perhaps because lavage is less systematically employed in that country. He is convinced of the great value of regularly washing out the stomach once or twice a day, according to the frequency of the vomiting. By removing retention products and mucus it also lessens the catarrh and swelling of the mucous membrane, and may in this way favor the escape of the contents through the narrowed pylorus. As subsidiary measures, he has adopted the German plan of applying continuous poultices to the epigastrium, and great care should be taken, as in all underfed babies, to maintain the body heat. If vomiting is severe and the amount of food which passes out of the stomach very small, fluid should be supplied per rectum in the form of normal saline enemata, 2 to 3 ounces being given at a time twice or thrice daily. These are of great value in supplying a sufficiency of fluid to the tissues and in promoting elimination of waste products by the kidneys. As to surgical treatment, he does not believe in operation, and states that all cases should be treated medically at first, and if after a lapse of from three to six weeks improvement does not show, the surgeon should be consulted.

12. **Starvation and Purgation.**—Guelpa remarks that in modern medical practice certain facts and corresponding deductions are received as undoubted truths, which, when examined with a little care, prove to be absolutely false and pernicious for the preservation of health and for the cure of disease: 1. Emaciation is almost always looked upon as unfavorable, even dangerous. On the contrary, is is generally useful, and often it should certainly be encouraged, because it enables the body to rapidly remove the intoxications which are the cause of the disease. 2. Weakness is not a manifestation of deficient nutrition as one understands it to-day, but is the result of imperfect removal of toxines. 3. Hunger is not the expression of need of the body for repair of its waste, but it shows us the degree of active intoxication in the digestive system. The incontestable proof of this is that cleansing of the digestive tract, especially repeated cleansing, causes the disappearance of hunger instead of an increase. 4. As a corollary, one must cease to limit the rôle of food to simple compensation of the waste of the body, for first of all it serves the purpose of absorbing and neutralizing the toxic products which are produced in the alimentary canal. It is only then that it performs its second rôle, which is to repair the waste of the body. 5. There is absolutely no danger in remaining deprived of food for several weeks provided care be taken to relieve the digestive tract of waste products and poisons which are daily formed there. When death occurs after only several days or weeks of starvation, it is not brought about, as some think, by the fact that the waste of the body has not been replaced, but it is the result of the excess of toxines which have accumulated and have not been excreted. 6. Purgation, when it is thorough and not drastic, is never a cause of dangerous inflammation of the digestive tract, even if repeated during several days in succession. It has, on the contrary, the advantage of securing disinfection of the digestive tract when that function is performed imperfectly, or not at all, by the food. 7. Purgation and deprivation of food, when their duration is not too prolonged, do not cause anæmia, but, on the other hand, they are the best means of increasing the red corpuscles, the hæmoglobin, and the leucocytes in their most vital form—the mononuclears.

LANCET

October 8, 1910.

1. Hereditary Aspects of Nervous and Mental Diseases, By F. W. Mott.
2. Abstracts of Introductory Addresses, etc., Delivered at the Medical Schools at the Opening of the Session 1910-11,
3. On the Meaning of the Audible Signs in Mitral Stenosis, By Alexander Morison.
4. Active Lobar Collapse of the Lung after Abdominal Operations. A Contribution to the Study of Postoperative Lung Complications, By W. Pasteur.
5. Ehrlich-Hata "606," By W. E. Home.

3. **Meaning of Audible Signs of Mitral Stenosis.**—Morison reports a case of mitral stenosis in a gardener, twenty-nine years of age who suffered from breathlessness on exertion. He found four phases as regards the audible signs: 1. A period of accelerated regular action, in which the first and second sounds resembled one another in duration and character—a "tic-tac" rhythm, as it has been called, in which no adventitious bruit was audible. 2. A period of slow action, in which there were triple rhythm at the apex and reduplication of the second sound at the base, when bruit was likewise absent. except in so far as it was represented by a bruitlike admixture or modification of the last of the sounds at the apex. 3. A period somewhat suddenly inaugurated by the complete presence of a characteristic and loud crescendo murmur at the apex, accentuated first sound, and disappearance of the triple rhythm, while the reduplication of the second sound persisted—the time interval or duration of this reduplication at the base being the same, so far as the ear could determine, as when the triple rhythm with slow rate was present. 4. A period just prior to the relapse of this case into the second regular tachycardia, when the heart was arrhythmical, moderately accelerated (114), and still presented the presystolic crescendo bruit, which was abolished by the succeeding regular tachycardia, the latter being suddenly followed by triple rhythm, slow rate, and a bruit noted as diastolic; this, again, yielding to the characteristic presystolic crescendo murmur with restored cardiac force, with which the patient left the hospital.

4. **Active Lobar Collapse of the Lung.**—Pasteur has noted the following points in active lobar collapse of the lung: As to the cause of active lobar collapse he found: 1. His cases of diphtheritic paralysis proved beyond question that arrest of diaphragmatic movement does cause massive lobar collapse of the lung. 2. His entire series of fatal cases (other than those due to paralysis) have, without exception, this feature in common—namely, the existence of a powerful source of irritation in the neighborhood of the diaphragm within the area supplied by the vagus—that is to say, a condition of things in which reflex inhibition of that muscle might very readily be set up. 3. In four out of the five cases the lung affected was on the same side as the operation wound. 4. The disappearance of apex beat and heart sounds from the normal position and their displacement toward the affected side. 5. The sudden overdistention of the unaffected lung. 6. The almost complete silence over the affected lobe. In the face of this evidence he reaches the conclusion that arrest of diaphragmatic movement is the cause of massive collapse in these cases; it seems almost impossible to account for the facts observed on any other hypothesis. Why inhibition should occur and what is the precise nature of the irritation which determines the reflex he is not at present in a position to state. The course of the nervous paths is fairly obvious in the gallbladder cases, and if, as there is reason to believe, the vagal ramifications in the abdomen extend to the whole length of the intestine, we may suppose that in all these cases the source of irritation lies within the vagus area of distribution.

5. **Ehrlich's 606.**—Home describes his visits to Wechselmann and Ehrlich, and the impressions he received. He reports that dioxydiamidoarsenobenzol has been used in the Hamburg Tropical Disease School in the treatment of malarial fever. To each of five patients 4½ grains were given, a very small dose. One patient appeared to be cured, in three cases the parasites and fever disappeared for a time, but returned, while in the fifth case the number of the parasites only decreased.

BERLINER KLINISCHE WOCHENSCHRIFT

September 26, 1910.

1. The Way of Infection of Pulmonary Tuberculosis; Its Clinical and Therapeutic Importance, By Aufrecht.
2. Experimental Studies Concerning the Treatment of Strychnine Poisoning with the Aid of Intratracheal Insufflation, By Shaklee and Meltzer.
3. Pathology of Acute Articular Rheumatism, By Mosler and Valentin.
4. Investigation of the Stomach with Capsules of Bismuth, By Max Cohn.
5. Four Cases of Resection of the Pylorus with Restoration of Health, By S. Derjushinski.
6. Another Case of Torsion of the Pedicle of the Gallbladder, By Fischer.
7. The Study of the Constitution in the Treatment of the Diseases of Children, By Paul Heim.
8. The Relations of Syphilis to Diseases of the Nerves and Other Internal Diseases, Based on 573 Serological Studies, By R. Ledermann.
9. 606 in Ambulant Practice, By Kromayer.
10. A Syphilis Microdiagnosticum, By C. S. Engel.
11. The Prevention of Post Partum Hæmorrhages and Substitution of Momburg's Tube of Constriction for the Manual Separation of the Placenta, By Felix Heymann.
12. Modern Remedies, Patent Medicines, and Specialties, By C. Bachem.
13. Modern Endeavors in the Treatment of Fractures, By H. Coenen.

1. **The Way of Infection in Pulmonary Tuberculosis.**—Aufrecht states that the result of his microscopical examinations of cases of pulmonary tuberculosis is the conclusion that the origin of pulmonary tuberculosis is to be ascribed to a disease of the terminal branches of the pulmonary artery and therefore cannot be caused by inhalation of the tubercle bacillus.

2. **Treatment of Strychnine Poisoning with the Aid of Intratracheal Insufflation.**—Shaklee and Meltzer briefly state the principal result of their experiments as follows: Very serious symptoms of strychnine poisoning may be overcome by means of intratracheal insufflation and intravenous injection of curarine, whereby an intravenous infusion of Ringer solution accelerates the elimination of both the curare and the strychnine. No bad after results can be attributed to the intratracheal insufflation.

9. **606 in Ambulant Practice.**—Kromayer believes that the final effect not only on the symptoms but on the syphilis itself will be better if the preparation is administed in fractional doses rather than in a single dose. Fractional doses are particularly well fitted for ambulant patients.

MEDIZINISCHE KLINIK.

October 2, 1910.

1. Cherry Stone Ileus, By Hermann Eichhorst.
2. The Influence of Accelerated Cardiac Activity upon the Resistance of the Heart, By M. Heitler.
3. Remarks Concerning the Ulnar Symptom, By Kurt Singer.
4. The Question of the Ulcus Ventriculi Rotundum, By Robert Latzel.
5. Experience with the Scopolamine Morphine Drowsiness in Conjunction with Chloroform Ether Narcosis, or Local Anæsthesia, By By Kretz.
6. Diagnosis of Epidemic Meningitis in Young Children, By Ernst Levy.
7. Influence Exerted upon the Symptoms of an Infant with Hereditary Syphilis by the Serum of a Patient Who Had Been Treated with Ehrlich's Arsenobenzol, By Meirowsky and Hartmann.
8. Technique of Treatment with Ehrlich-Hata's 606, By Junkermann.
9. The Action of 606 (*Continued*).
10. How to Make a Solution of 606 Ready for Use, By Kromayer.
11. Advances in Aerology, By Alfred Wegener.

1. **Cherry Stone Ileus.**—Eichhorst reports a case of intestinal obstruction met with in a woman, forty-seven years old, due, it was thought, to the presence of a malignant tumor. An operation was performed immediately and the obstruction found to consist of a mass of cherry stones in the ascending colon. By actual count the number of cherry stones was found to be 909.

2. **Accelerated Cardiac Activity and the Resistance of the Heart.**—Heitler asserts that not only in different individuals, but also in the same individual the resistance of the heart when its activity is accelerated is increased or diminished in proportion as the energy of the heart is increased or diminished.

6. **Diagnosis of Epidemic Meningitis in Young Children.**—Levy holds that the key stone of the diagnosis is the bacteriological examination of the spinal fluid obtained by lumbar puncture.

7. **Influence Exerted upon the Symptoms of an Infant with Hereditary Syphilis by the Serum of a Patient Who Had Been Treated with 606.**—Meirowsky and Hartmann report a case in which a syphilitic infant was treated with injections of the blood serum of other syphilitics who had received injections of 606. This method was tried because on account of the inability of the mother to nurse the child a repetition of the experiment performed by Taege and Duhot, to ameliorate the condition of the child by injection of the mother with 606, was impracticable. The patients from whom the serum was taken had been injected 2, 3, 5, and 14 days previously, and eight injections of varying quantities were made within a fortnight. Two days after the first injection a decided improvement was noticed, and this increased after the subsequent injections. At the same time a cure was evidently not effected because a few days after the last injection a coryza and a periostitis of the right arm developed.

9. **606.**—Replies to the questions propounded by the *Medizinische Klinik* continue to come in, the additional ones thus far from von Zeissl, Pick, Grouven, Schulz, Aschaffenburg and Geissler, Clemens, McDonagh, Wechselmann, Michaelis, Kromayer, Saalfeld, Halberstaedter, Bruhns, Duhot, Geronne, Deneke, Ledermann, Zumsteeg, and Chrzelitzer. Some of the replies are very brief and lacking in data, others are quite full and are evidence of considerable experience. The solutions used vary and are perhaps responsible for the varying observations regarding the pain, fever, and other symptoms induced by the injection. Brilliant results in primary and secondary syphilis are reported by all who have used the remedy in these stages of the disease, as well as in late syphilis, though some admit that the time of observation has been too short to permit conclusions to be drawn. The latter is insisted upon with regard to metaluetic diseases by all who have used the remedy in such cases. Few failures and not many recurrences are reported. There is no general agreement as to the effect of Wassermann's reaction.

10. **How to Prepare Solutions of 606.**—Kromayer replies to objections that have been made to his ten per cent. emulsion of 606 in liquid paraffin and reasserts his statement that while 606 itself is irritating to the tissues injections of his emulsion can be made without much pain, that the emulsion is easily prepared, is stable so it does not have to be prepared freshly for each case, and that it can be used not only in the hospital, but also in ambulant cases.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 27, 1910.

1. The Intravenous Injection of 606, By Schreiber.
2. Our Experience thus far with 606, By Huegel and Ruete.
3. Report of 375 Cases Treated with 606, By Sieskind.
4. The Clinical Action of 606, By Sellei.
5. Permanent Biliary Fistula and Osteoporosis in Man, By Seidel.
6. Treatment before and after Abdominal Operations, Early Rising in Particular, By Krecke.
7. A Case of Dysbasia Angiosclerotica with the Symptom of Ischæmia and Subsequent Hyperæmia, By Fischer.
8. A Method to Increase the Anæsthetic Action of Local Anæsthetics, By Gros.
9. The Use of Novocaine in Solutions of Sodium Bicarbonate and Salt for Local Anæsthesia, By Laewen.
10. Digipuratum Knoll, By Veiel.
11. A Lip Clamp, By Merz-Weigandt.
12. Epidemiology of Acute Anterior Poliomyelitis, By Jogichess.
13. Medical Impressions from a Vacation in East Africa.

1. **Intravenous Injection of 606.**—Schreiber describes the technique of intravenous injections of 606 with a description of the instrument used. The remedy should never be given in a concentrated solution, but in considerable dilution. On account of its complicated technique he does not think this method of administration suitable for general practice, but says we must strive to find a means whereby it may be injected into the muscles or subcutaneously easily and without pain. Still he has the impression that in the majority of cases results are obtained more quickly and more certainly from the intravenous than from the intramuscular injection.

2, 3, and 4. Experiences with 606.—Huegel and Ruete have used the remedy in thirty cases and have obtained results similar to those generally reported. They have not observed any of the bad after effects which have been met with in the use of atoxyl and arsacetin.——Sieskind reports concerning 375 patients treated under the direction of Wechselmann in Berlin. He states that 606 exhibits the following advantages over mercury: 1. In cases in which mercury fails the new preparation is successful. 2. A single injection is able to accomplish the same as is accomplished by from eight to ten injections of an insoluble salt of mercury, or from five to six weeks of inunction. 3. The stay of the patient in the hospital is reduced to from four to sixteen days. 4. To the patient the advantages are manifold. They are: A. For hospital patients: (*a*) the shortened stay in the hospital enables the preparation to be used on a greater number of patients and thereby the danger of infection is reduced in the community; (*b*) the patient is kept a shorter time from his work; (*c*) the treatment is less unpleasant than inunction. B. For ambulant patients: (*a*) the possibility of discretion; (b) the possibility of reducing the danger of infection through prostitution; (*c*) the possibility of shortening the duration of private treatment. 5. The patients are not exposed to long continued chronic troubles, such as chronic mercurialism and constitutional iodism. Finally the writer gives the following indications and contraindications: The preparation should be used: 1. In cases of malignant syphilis and those that ulcerate early, particularly when they are refractory to mercurial treatment. 2. In cases at any period of the disease in which mercury is not well borne. 3. In cases in which recurrences continually take place in spite of repeated mercurial treatments. 4. In cases of fresh syphilis while the primary sore still exists before the outbreak of the exanthem, if possible with excision of the primary sore, or with destruction of it by means of the hot air treatment, or in conjunction with local subcutaneous injections of a very small quantity of the preparation. 5. In tuberculous syphilitics in whom the effect of the mercurial treatment upon the tuberculosis is bad. 6. In cases of visceral syphilis, the patients suffering from epileptoid attacks. 7. In decrepid persons in whom the eyes, heart, and lungs are sound. 8. In cases of latent syphilis in which a negative Wassermann reaction has not been obtained in spite of repeated treatments with mercury and iodide. 9. In parasyphilitic diseases in their early stages. The contraindications are: 1. Serious nonsyphilitic diseases of the retina and optic nerve. 2. Serious organic diseases of the heart and bloodvessels. 3. Serious diseases of the lungs, excluding tuberculosis. 4. Serious nonsyphilitic diseases of the kidney. 5. Advanced degenerative diseases of the central nervous system 6. A temporary contraindication is the presence of angina and fever. In these cases the injection should be postponed until these troubles have subsided.—Sellei adds his testimony in regard to the action of 606, based on the observation of eighty-six cases.

8 and 9. A Method to Increase the Anæsthetic Action of Local Anæsthetics.—Gros says that a combination of the chloride of the chosen anæsthetic with a solution of sodium carbonate acts more efficiently than the chloride alone, while at the same time no injury to the action of suprarenin is to be feared.—Laewen describes his experiments with novocaine chloride and novocaine bicarbonate in which he shows that the terminal filaments of the sensitive nerves are acted upon by solutions of the bicarbonate of novocaine of one half to one third the strength required by solutions of the chloride. He also finds that the anæsthesia produced by the bicarbonate lasts considerably longer than that produced by the chloride.

WIENER KLINISCHE WOCHENSCHRIFT.

September 29, 1910.

1. The Technique and Clinical Use of the Bacteriological Demonstration of Typhus, By Alfred Weisskopf.
2. A Deformed Pelvis, By C. Sternberg.
3. The Action of Ehrlich's Arsenobenzol upon the Syphilis of Children, with Special Reference to Congenital Syphilis, By Richard Kalb.
4. Report Concerning the Ehrlich-Hata Treatment, By A. von Torday.
5. Putrefactive Power of the Alcoholic Stool, By A. Rodella.
6. Method of Measuring the Blood Pressure in Man, By S. Federn.

1. Bacteriological Demonstration of Typhus Bacilli.—Weisskopf says that of the nutritive media which may be used for typhus bacilli the three best are the malachit green agar of Padlewsky, the acid fuchsin agar of Kindborg, and the nutrose lacmus crystal violet agar of Conradi-Drigalski. In practice he recommends the simultaneous use of all three of these nutritive media. The procedure he describes is particularly fitted for the examination of the fæces in suspected cases, and he considers it of importance ranking with the Widal serum reaction and the culture of the blood coagulum in the clinical diagnosis of typhus.

3. 606 in the Syphilis of Children.—Kalb reports two cases of acquired syphilis and six cases of congenital in children treated with 606. The preparation was injected into the glutæi in neutral suspension in doses of from 0.02 to 0.03 gramme. The children bore the remedy without trouble, apparently without pain, and no infiltrate or other unpleasant incident was noticed. One child had Parrot's pseudoparalysis, another had great enlargement of the liver, and a third was being nursed by a syphilitic mother who was being treated with calomel. One child, the one nursed by the syphilitic mother, died a few days after the injection. The autopsy revealed diffuse serofibrinous peritonitis, fibrinous pleuritis on both sides, a low degree of atalectasis of the right lung, congenital syphilis, papules on the lower lip, osteochondritis luetica, gummata of the liver, interstitial hepatitis, indurative pancreatitis, a tumor of the spleen, gummata in the kidneys, acute parenchymatous nephritis, hæmorrhages in the mucous membrane of the ureter and of the bladder, and great anæmia. No trace of arsenic could be found in the liver. Many organs and the aorta were examined for spirochætæ, but they were found only sparsely in the liver alone, part pale, part well stained. In the kidneys great quantities of the *Bacterium coli* were found, probably a post mortem phenomenon. The preparation injected does not seem to have been the cause of death. The writer inclines to the view that the nursing mother should be treated with 606 when possible. In acquired syphilis of children the healing of the clinical symptoms followed the same course as in adults. In congenital syphilis the exanthem disappeared the most quickly, then the bone changes, such as periostitis, the pseudoparalysis, and the coryza. Hearing was likewise quickly improved.

AMERICAN JOURNAL OF OBSTETRICS.

October, 1910.

1. Some Neglected Principles in the Causation of Menstrual Disorders, By E. Novak.
2. An Improved and Perfected Operation for the Relief of Extreme Cases of Procidentia, Cystocele, and Rectocele, By J. R. Goffe.
3. Postoperative Neuroses of Pelvic Origin, By H. W. Crouse.
4. Twisted Pedicles, By F. N. Ward.
5. Combined External and Vaginal Version, By H. M. Stowe.
6. The Need for Further Development of the Surgery of the Upper Pelvic Floor by Direct (Suprapubic) Approach, By W. M. Polk.
7. The Pathological Diagnosis of Incipient Carcinoma of the Uterus, By I. C. Rubin.
8. Report of Three Cases of Pregnancy Following Salpingectomy, By J. O. Polak.
9. The Results of a Modified Gilliam Operation for Suspending the Uterus by the Round Ligaments, By J. R. B. Branch.
10. Missed Abortion and Labor, By F. A. Rhodes.
11. Case of Vertex and Foot Presentation, By P. E. Gilbert.
12. The Exceptional Child. The Influence of Environment and Education upon His Development, By S. P. Goodhart.
13. The Prevention of the More Common Errors of Development, By J. P. Fiske.
14. The Treatment of Nasal Catarrh Based upon the Modern View of Its Pathology, By C. G. Crane.

1. Some Neglected Principles in the Causation of Menstrual Disorders.—Novak says that pain and leucorrhœa with the disturbances of menstruation make up a large portion of the array of local subjective symptoms in pelvic disease, but they are only symptoms, and to remove them one must remove the underlying cause. To understand the pathological disturbances of menstruation a clear conception of the normal physiology is essential, but there is much about this that we do not yet know. Three factors are to be considered in the physiology of normal menstruation: 1. An underlying cause, yet undetermined, to which is due the occurrence and periodicity of menstruation. 2. The characteristic vasomotor phenomena which affect the pelvic bloodvessels. 3. The histological modifications of the endometrium which correspond to the various phases of the menstrual cycle. In the treatment of menstrual disorders an effort should always be made to ascertain the cause of the disturbance, and in searching for this cause due regard must be paid to perversion of physiological function as well as to alteration of anatomical structure of the reproductive organs.

3. Postoperative Neuroses of Pelvic Origin.—Crouse is of the opinion that failure on the part of neurologists to recognize gynæcological disease, and failure on the part of gynæcologists to appreciate nervous disease or its manifestations in women accounts for the want of a cure in many cases which are amenable to the dual treatment. Much testimony is brought forward to show the intimate connection of the nervous system with lesions of the pelvic organs and the conclusion is reached that we should be extremely cautious in weighing the nerve features of our patients together with the pathological condition of the female genitals before promising prompt relief after operations. A gynæcological examination is not complete without careful examination of the sacral plexus, which is best treated through the rectum. A sensitive condition of this plexus or other intrapelvic nerves prohibits a promise that the irritating symptoms will promptly disappear after operation. Time, tonics, eliminatives, rest, and an assurance of ultimate success are the remedies needed.

5. Combined External and Vaginal Version.—Stowe reaches the following conclusions: The combined external and vaginal version is not dependent upon the size of the cervix nor the degree of its effacement. It is often impossible to correct a malpresentation during the later weeks of pregnancy by external methods alone. Preliminary dilatation of the perinæum in primaparæ and the version itself does not tend to terminate the pregnancy. There is little difficulty in maintaining the fœtus in its new position. Danger of premature separation of the placenta during pregnancy is inconsiderable. The proper presentation of the fœtus should be obtained before labor begins. The operation is easier of performance before the membranes have ruptured than after. The danger of premature separation of the placenta depends upon the degree of uterine retraction and the quantity of liquor amnii in the uterus. The danger of infection is reduced to a minimum if the hand does not enter the uterus. In certain cases of placenta prævia the foot can be brought down to the inlet before the membranes are ruptured. It is easier to secure a foot than in the Braxton Hicks method.

AMERICAN JOURNAL OF SURGERY.

October, 1910.

1. Bismuth Paste Injections in Nasal Accessory Sinus Disease, By Joseph H. Beck.
2. Bismuth Paste Treatment of Chronic Sinuses, By Harry Aranow.
3. Chronic Catarrhal Otitis Media and Otosclerosis—Ætiology, Pathology, and Prognosis, By W. Sohier Bryant.
4. The Treatment of Chronic Catarrhal Otitis Media and Otosclerosis, By Edmund Prince Fowler.
5. The Importance of the Clinical Laboratory in Surgery, By Henry R. Harrower.
6. Local Anæsthesia, By Arthur E. Hertzler.
7. Solitary Perforation of the Ileum Associated with Strangulated and Obstructed Herniæ. Report of Two Cases with Recovery, By Arthur E. Sellenings.

1, 2. Bismuth Paste Injections in Sinus Disease.—Beck remarks that it has been positively proved that within the body bismuth paste acts as a chemotactic and bactericide. By its semisolid consistency it acts as a sustentacular framework, so that granulation can more easily bridge over and obliterate a cavity. By its presence it will prevent the accumulation of secretions and reinfection. Any channel or cavity which is devoid of epithelium and collapsible, stiff walled, but not too large, will become obliterated by the large and healthy granulations which are characteristic of bismuth paste. There are other medicinal substances that have a good influence on suppurative conditions, such as Credé's ointment, iodine, balsam Peru, etc., but none of the remedies is as satisfactory as the bismuth subnitrate paste. He states that he does not say that the bismuth paste is the panacea for all ills, but he asserts that any one who will take the trouble to inform himself on the proper technique in the use of this paste will get results that he cannot obtain from any other local measure and adjunct to surgical measures.—Aranow observes that by injecting sinuses and cavities with a bismuth paste which turns solid at body temperature and is absorbed very slowly it holds the granulating walls apart and provides a sort of trellis work into which healthy granulations can burrow and spread. Both laboratory and clinical experience have shown that bismuth has a marked bactericidal action. This also holds true with the *Bacillus tuberculosis.* After the injection of the paste there is marked exudation of polynuclear leucocytes to the neighborhood of the sinuses. This seems to show that bismuth has some chemotactic action on the white blood cells.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

October, 1910.

1. Dilatation of the Aorta, By THOMAS MCCRAE.
2. Heart Block with an Indication of Genuine Hemisystole, By ALFRED STENGEL and WILLIAM PEPPER.
3. The Treatment of Aneurysm of the Aorta by the Introduction of Wire and the Passage of a Galvanic Current, By AUGUSTUS A. ESHNER.
4. Orthodiagraphy in Pathological Conditions of the Heart and Aorta, By THOMAS A. CLAYTOR and WALTER H. MERRILL.
5. The Ætiology of Subacute Infective Endocarditis, By E. LIBMAN and H. L. CELLER.
6. Syphilitic Febrile Pylephlebitis, with Remarks on Syphilitic Fever and Aberrant Types of Hepatic Syphilis, By ARTHUR R. EDWARDS.
7. Stretching of the Cardia in the Treatment of Cardiospasm and Idiopathic Dilatation of the Œsophagus, By MAX EINHORN.
8. A Preliminary Note on Medical Uses of Rectal Infusions, By HENRY SEWALL.
9. The X Ray Treatment of Status Lymphaticus, with Inferences Drawn therefrom Concerning the Physiology of the Thymus Gland, By B. K. RACHFORD.
10. A Case of Splenomegaly Associated with Marked Anæmia of the Pernicious Type, By R. D. RUDOLF and C. E. C. COLE.
11. The Spinal Cord Lesions in Two Cases of Pernicious (Addisonian) Anæmia, By C. N. B. CAMAC and LINDSAY S. MILNE.

1. **Dilatation of the Aorta.**—McCrae observes that dilatation of the aorta, considered apart from aneurysm, is relatively common and probably occurs more frequently than aneurysm. Two main ætiological factors stand out—acute infections, notably rheumatic fever, and those which cause general sclerotic changes. The symptoms often suggest disease of the heart itself. The physical signs are often very definite, of which visible pulsation in the upper interspaces, dullness over the upper sternum and adjoining interspaces, and the fluoroscopic examination are the most important. Pressure signs are comparatively common, but are rarely severe. The diagnosis can usually be readily made from aneurysm. The outlook as regards dilatation is good. The treatment consists in rest, diet, and drugs. Rest: There is no universal rule, and the question must be decided for each patient. If there is pain, dyspnœa, distress, or œdema of the feet, a period of absolute rest is advisable until relief is obtained. But rest should not be too prolonged, and in an ordinary case there does not seem any advantage in more than two or three weeks. Prolonged periods of physical rest are not advisable, and rest from worry and the strain of daily troubles seems more important. A long vacation is advisable if it be possible. In the laboring classes, to which so many of these patients belong, the problem is more difficult. Occupations which involve severe strain should be given up and every effort made to have the patient employed at some lighter task. When the patients are free of symptoms a certain amount of exercise is an advantage, if the associated conditions do not forbid: Diet: This should conform to the general rules for arteriosclerosis. Reduction in the amount is most important, and meat especially should be limited in amount. Alcohol is best omitted, and fluids should not be taken in large amounts. Drugs: The bowels must be kept freely open, for constipation seems to be especially harmful. Such purgatives as senna, aloes, cascara, and phenolphthalein may be given, and an occasional mercurial (nothing is better than 5 grains of gray powder) may be given at night followed by a saline in the morning. There is no drug which can have any marked effect on the aorta, for the damage is done. Potassium iodide should always be given and small doses (3 to 10 grains) are probably best, over considerable periods of time. The vasodilators are usually not indicated: if high pressure is present they may be tried cautiously. Digitalis is not indicated for the aortic condition alone and may do harm. For the attacks of pain—if severe enough to demand treatment—codeine may be given by the mouth; morphine is rarely required, but should be given if the pain is very severe. Some patients, even with a low blood pressure, find that nitroglycerin (1/100 to 1/20 grain) gives almost immediate relief, and there can be no objection to its use. Others find relief from a dose of aromatic spirit of ammonia (one drachm) with spirit of chloroform (fifteen minims). In general, it may be said that a quiet, even life, with avoidance of physical and mental strain, a diet limited especially in amount, open bowels, and meeting special indications when necessary, are the main points. With these we may hope to give the patients in whom the heart is not markedly affected many years of comfortable life. When cardiac breakdown appears, it must receive proper treatment.

3. **Aneurysm of the Aorta.**—Eshner states that aneurysm of the aorta is essentially a fatal disorder, although exceptionally spontaneous cure takes place. Accordingly, treatment can, as a rule, be only palliative, relieving symptoms and prolonging life. Deligation is inapplicable from anatomical considerations. Rest, ergot, iodides, gelatin, calcium chloride, adrenalin chloride, and introduction of foreign substances, with or without the passage of a galvanic current, have been employed. Horsehair, catgut, needles, watchspring, and wire of various kind have been introduced, with varying result, and a galvanic current has been passed through conducting substances. Wiring with electrolysis has been employed in a number of instances, with satisfactory

results in the majority. The procedure has proved simple and safe, but it is applicable only to sacculated and not to fusiform aneurysms.

5. **Subacute Infective Endocarditis.**—Libman and Celler have made in the last twelve years 3,000 blood cultures while studying the bacteriology of the blood. They have thus studied many cases of acute endocarditis in which streptococci, staphylococci, pneumococci, and the gonococcus were found. But these organisms have not thus far been encountered in any blood culture made in the subacute infective endocarditis. Some of these cases present such a typical symptom complex that a clinical diagnosis can be made with a fair degree of certainty. It may, however, be difficult to distinguish them from cases of chronic endocarditis with fever in which there is no superimposed bacterial infection of the valve, and the disease is not infrequently confounded with such conditions as rheumatism, typhoid fever, tuberculosis, Banti's disease, or splenic anæmia. While the onset is usually insidious and acute phenomena do not develop for a long time (or possibly not at all), there are cases which first present themselves with a picture resembling an acute surgical condition. Under these conditions the disease has been mistaken for appendicitis (because of acute abdominal symptoms), for abscess of the spleen, or for pyelonephritis. And it has transpired that surgical measures have been adopted in such cases.

6. **Syphilitic Febrile Pylephlebitis.**—Edwards suggests that what is seemingly a suppurative pylephlebitis, with intensely septicopyæmic symptoms, may be syphilitic pylephlebitis with spirochæta sepsis. There is always the possibility that various vague or obvious portal vein, gallbladder, and liver symptoms may be syphilitic—a possibility of vast therapeutic significance. Hepatic gumma may precisely simulate hepatic cancer, even to the extent of the characteristic cachexia, and perhaps, also, of the significant gastric findings. Certain cases of seeming atrophic cirrhosis may respond to antiluetic remedies. Cholelithiasis, cholecystitis, and hepatic abscess may be simulated by syphilis of the liver. Tertiary invasion of the liver or portal vein may run its course without localizing signs, and masquerade as typhoid fever, septichæmia, tuberculosis, or malaria. When the Widal reaction, blood cultures, tuberculin test, and examination for plasmodia are negative, it is not fantastic to suggest the employment of mercury and iodides.

ANNALS OF SURGERY.

October, 1910.

1. Transfusion by Carrel's End to End Suture Method, By Eugene H. Pool and R. D. McClure.
2. Blood Transfusion in Hæmophilia, By Charles Goodman.
3. Graft of the Vena Cava on the Abdominal Aorta, By Alexis Carrel.
4. A Suggestion for the Treatment of Air Embolism, By Vilray Papin Blair and Hugh McGuigan.
5. Preservation of the Submaxillary Branch of the Facial Nerve in Operations on the Neck, By Charles E. Farr.
6. Anæsthol Poisoning, Causing Acute Yellow Atrophy of Liver after Operation for Ileocolic Intussusception, By Franz Torek.
7. The Surgical Aspect of Epulis and Sarcoma of the Jaw, By John Speese.
8. The Use of Differential Pressure in the Treatment of Empyema, By E. M. von Eberts.
9. Primary Sarcoma of the Stomach, By A. Ernest Maylard and John Anderson.
10. The Function of the Appendix and the Origin of Appendicitis, By Edred M. Corner.
11. A Simple Method of Suturing all Hollow Viscera, By Willard Bartlett.
12. The Rectosigmoidal Arterial Anastomosis, By Carl B. Davis.
13. The Bone Metastases of Hypernephroma, By Charles L. Scudder.
14. Plastic Repair of the Thumb, By H. A. Haubold.
15. Wright's Solution of Sodium Citrate and Sodium Chloride for Drainage, By L. R. G. Crandon.
16. The Relation of the Ductless Glands to Surgery, By J. E. Sweet.

1. **Transfusion by Carrel's End to End Suture Method.**—Pool and McClure say that an argument in favor of the Carrel suture is that the anastomosis is not guarded by a rigid mechanical device, and can, therefore, be rolled and massaged with the rest of the exposed parts of the two vessels, if the flow appears too slow. Such stripping between the well oiled fingers has in their experience tended to keep the vessels dilated, thus permitting a full stream of blood. Another favorable feature of the Carrel method is that the calibre of the vessels is not diminished, and extreme dilatation at the site of the anastomosis is possible because the line of suture is on the stretch during the anastomosis. The strain is divided among many stitches, which, though frail in themselves, allow any reasonable amount of rough handling when combined. The absence of apparatus also prevents obscuring of the site of anastomosis so that any twisting of the vessels is at once apparent and can be easily corrected. Although the median cephalic or median basilic veins may be used in adults, in infants and in children, the saphenous or femoral veins are more favorable for transfusion. The position of the saphenous vein is definite, its length is sufficient, and there is no danger of injury to important structures or to the circulation of the limb; its calibre alone is questionable. In infants and young children it is too small. It seems wise, however, to examine it before exposing the femoral vein. The depth of the vein in the subcutaneous fat may cause some delay in locating it in the small subject, unless its anatomical position is definitely borne in mind. They have also used on several of their adult patients the saphenous vein near the ankle.

3. **Graft of Vena Cava on Aorta.**—Carrel has performed three experiments on two cats and one dog in grafting the vena cava on the abdominal aorta. The three animals that underwent the transplantation were in normal condition a few hours after the operation and recovered without complication, and were well three, ten, and fourteen months, respectively, after the operation. He concludes that the venous wall reacts against the arterial blood pressure by thickening its wall. The condition of the venous wall and of the anastomoses examined fourteen months after the operation shows that, for a long time, a segment of vena cava can functionate as a part of the abdominal aorta. It is probable that in the treatment of aneurysm, rupture of large arteries, embolus, and localized arteritis, the transplantation of venous segments can be used safely, but it must be emphasized that without a proper

technique, the results of the operation will be disastrous.

10. **Function of the Appendix.**—Corner remarks that it has long been taught that this organ was functionless, and that most probably in this lay its apparent incapability to resist the attacks of disease. That it represents the terminal portion of the cæcum which has become distinctive in development is undeniable, but that it is functionless is undoubtedly untrue. Like the rest of the intestinal mucous membrane, that of the appendix has numerous glands whose secretion has apparently an insignificant digestive action on all foods. As little if any contents of the cæcum ever enter the appendix, any digestive action it has must be of the smallest, and its absorption of products of digestion cannot be greater. In the small intestine the products of digestion are fluid and are being continuously passed onward by peristalsis; the cæcum is the first great "resting place" for these products since they have left the stomach; the large intestine, as its name implies, is of greater calibre than the small and is more suited for the carriage by peristalsis of solid than liquid fæces; the cæcum being rendered less mobile owing to its peritoneal attachments and, in man, having to work semifluid material against gravity, the products of digestion have to remain in it until their consistence has become such as allows of their passage along the large intestine; the change in consistence is made by the deposit of mucus from the glands of the large intestine and by the absorption of water. At the same time the fermentative changes of myriads of microorganisms take place, to whom the temporary stagnation offers opportunity of multiplication. Hence the far greater quantity of bacteria in the large than in the small intestine. The temporary delay in the passage of the intestinal contents, the absence of a secretion like that of the stomach, the presence of large quantities of active microorganisms and their products point to the necessity for the development of a protective armament on the part of the host to counteract them. He, therefore, concludes the need of the appendix, or "intestinal tonsil."

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Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-sixth Annual Meeting, held in Detroit, September 13, 14, and 15, 1910.

The President, Dr. Frank P. Norbury, of Hospital, Ill., in the Chair

After an invocation by the Rev. Edward H. Pence and addresses of welcome by the Hon. Philip Breitmeyer, mayor of Detroit, by Dr. J. H. Carstens, president of the Michigan State Medical Society, and by Dr. A. D. Holmes, president of the Wayne County Medical Society, which were responded to on behalf of the association by Dr. Edwin Walker, of Evansville, Ind., the Medical and Surgical Sections convened for the reading and discussion of papers.

Pain in Abdominal Diseases.—Dr. William M. Harsha, of Chicago, stated that in order to interpret pain properly, a careful history of the case was necessary, as pain must be considered in relation to other factors in a given case, and without these it lost its chief importance. The relation of pain to taking food was also of great value, particularly in duodenal or gastric ulcer or the various stenoses, benign or malignant. The direction and extent of painful radiation and the association with the hyperæsthesia, local tenderness, and muscular rigidity were of the greatest importance, as indications of both the site and gravity of the lesion. The arm pain in angina pectoris, the shoulder or upward radiation in gallbladder disease, and the downward, forward, and testicular pain in nephritic colic were well known examples. The pain of abdominal disease might be either spontaneous or elicited by pressure, movement, or position, and it might be influenced by psychical, thermic, mechanical, or chemical means, all of which might be useful to aid in exact diagnosis. Diseased viscera caused pain at or near their various sites, but there were many exceptions which lent importance to the reflex, or referred, pains. In most visceral lesions there was a disturbance manifested variously by pain, tenderness, hyperæsthesia, or muscular rigidity on certain areas of the external, or protective, portions of the body. As moderate shock or fright would emphasize a vanishing or latent pain, he had tried the faradic current in suitable cases, and in two instances he had been able to locate the trouble more definitely. A great majority of abdominal diseases, especially of the more acute variety, were first heralded by pain rather than by change of size, position, or other physical conditions. The surgeon could often gauge the urgency in a given case by the character and severity of pain. Taking cognizance of the value of pain associated with local distentions and peristalsis, or the absence of peristalsis, one might locate a stenosis or other forms of obstruction, calling to his aid submerged palpation, or palpation in the bath, which would enable him to detect induration which was otherwise not palpable. By observing the time relation of pain to other symptoms, the effect of food, drugs, cathartics, cold, fatigue, movement, position, jarring, first percussion, anæsthetics, or electric stimulation, one should be able to increase the percentage of correct diagnoses.

The safety of abdominal section might have caused physicians to relax their efforts at exact diagnosis. It had happened many times that laparotomy had been done for appendicular inflammation when a movable kidney, pyelonephritis, ureteral stone, typhoid fever, diaphragmatic pleurisy, salpingitis, or some other condition was present. Age, sex, occupation, and previous history might give valuable aid. In childhood intestinal troubles prevailed, and one was likely to encounter appendicitis, intussusception, or tuberculosis, and in advanced age malignant disease. In women the pelvic organs were frequent sites of disease, while gallstones were more frequent. Lead colic might simulate organic disease. A history of indigestion, with vague epigastric pain, might aid in revealing a perforation of the duodenum or stomach, and a record of previous inflammatory trouble in the abdomen might explain a sudden intestinal obstruction. Among the less frequent conditions might be mentioned the meteorism with abdominal pain resulting from the embarrassed portal circulation in cardiac insufficiency. He had recently seen a case of this kind where the pain was so pronounced and distention so great that abdominal tumor was suspected by one physician. One should consider the possibility of disease of the central nervous system, such as tabes, hysteria, disease of the spine, such as caries, or spondylitis deformans. One should also consider the possibility of disease of the thorax. Excluding pain from the cord, spine, or reflex causes, one should remember that diseased viscera might be at the normal site, displaced especially by prolapse, or transposed. On the surgeon fell the burden of responsibility for exact diagnosis, as his operative experience should add to his knowledge.

Dr. WILLIAM FULLER, of Chicago, said the man who could best interpret the significance of pain was the one who had suffered some pain. While he did not think it was necessary to have all the acute abdominal diseases in which there was great pain to make a diagnosis, he thought a little knowledge gained in a practical way helped out very much.

Dr. CHANNING W. BARRETT, of Chicago, stated that when a patient complained of pain generally over the abdomen it was found frequently that by putting the finger upon the point that was affected or supposed to be affected and making a little pressure the surrounding pain disappeared.

Dr. L. W. BREMERMAN, of Chicago, stated that in diseases of the kidney or the ureter he had seen cases in which there was hæmaturia, with marked pain over the region of the kidney, the kidney being felt on palpation, with excessive tenderness over the kidney, a kidney lesion diagnosticated and surgical intervention recommended. Upon cystoscopic examination of the individual, he discovered that the hæmaturia was developing from the supposedly healthy kidney, the urine from the supposedly diseased kidney being normal. Every method of examination should be resorted to before an absolute diagnosis was made.

Dr. HARSHA stated that the thing that had most impressed him in studying this subject was the need of considering three or four different sources of abdominal pain—first, the central nervous system; second, the spine; third, the reflexes; and, fourth, the visceral diseases themselves.

The Cause and Significance of Tubal Rupture in Extrauterine Pregnancy.—Dr. CHANNING W. BARRETT, of Chicago, read a paper on this subject in which he drew the following conclusions: 1. Pregnancy, which was considered to be always extrauterine in the beginning, assumed pathological significance when it underwent ectopic attachment. 2. The ovum attached in the tube had a parasitic action, having a malignant tendency in that it destroyed maternal tissues, embedded itself in the tube wall, and tended toward death of the mother, but in "making its bed dug its own grave." 3. The growth of the ovum or enlargement of a dead ovum mass, together with the destruction and thinning of the tube wall, led to almost certain rupture of the tube. 4. The primary rupture might be partial and even slight, or it might be complete and even fatal. 5. If complete, a subsequent rupture or ruptures were the rule. 6. With rupture free hæmorrhage, more or less severe, occurred, which was never to be looked upon lightly and which might prove fatal. 7. The loss of blood might be through one rapid fatal hæmorrhage, or there might be a series of lesser hæmorrhages. 8. If the patient did not succumb to loss of blood, the presence of the blood and the ovum in the abdominal cavity acted as irritating foreign substances leading to loss of function and pathological changes in the viscera, and perhaps to local or general infection, thrombosis, embolism, etc. 9. The dead ovum was only slightly less harmful from the standpoint of infection. 10. A study of the pathology made all treatment looking toward killing the ovum appear irrational. 11. Patients in good condition, with or without ruptures, were almost certain to have future trouble and should have an operation as soon as was consistent with good work. 12. Patients in bad condition with concealed hæmorrhage from the cause in question had collapse in proportion to the amount of blood lost, and rational treatment must look with certainty toward the stopping of further hæmorrhage. 13. An opening of the abdomen with clamping or ligaturing of the vessels was the only reliable means of controlling internal hæmorrhage, and if done rapidly and with care was little of a tax upon the patient. 14. The clinical experience of the world and a study of the pathology of this condition pointed to the danger of delay. 15. The more desperate the case, while the patient yet lived, the greater the call for immediate action.

Dr. EDWIN WALKER, of Evansville, Ind., fully agreed with the essayist, and, so far as his personal knowledge went, he knew of one death from repeated hæmorrhages; but most of the deaths had been in delayed cases in which sepsis had occurred after operation. The teaching that we should wait in these cases was not sound. He felt that the position taken by Robb was untenable. Those patients that had been operated upon promptly, in his experience, had recovered.

Dr. JOSEPH RILUS EASTMAN, of Indianapolis, stated that this was 1910, and it was a pity that it was necessary for Dr. Barrett to present a paper like the one he had read. The teaching that it was wise to allow a woman to bleed into her own abdomen or into her tube or uterus, while the surgeon stood by with his arms folded and fell back upon soft pillows or relied on Providence, was absolutely pernicious. If a vessel were bleeding upon the surface of her body, what man would be so negligent or so indolent as to stand by and allow her to bleed to death?

Dr. CHARLES STOLTZ, of South Bend, Ind., thought the more energy they expended in teaching that these conditions were to be met and not dallied with, the better. The men who had received the proper teaching would recognize these conditions, and they would usually find some one who was competent to meet the conditions speedily, or they might be competent to operate themselves, because if there was any delay, or if the patient was carried from one place to another, she might just as surely die in one community as another.

Special Points in Advanced Extrauterine Preg-

nancy.—Dr. SHELBY C. CARSON, of Greensboro, Ala., in this paper directed special attention to the control of hæmorrhage during the operation. Although his experience was *nil,* he ventured the suggestion that the operation for advanced extrauterine pregnancy be done in two stages when necessary or advisable, at an interval of forty-eight to sixty hours, according to the judgment of the operator. In the first place, let the abdomen be opened, the child extracted, the iliac tightly compressed by metal bands, and further, to be doubly sure, the ovarian and uterine arteries clamped by rubber covered forceps, if they could be approached. In the second stage, separate the sac, release the bloodvessels after ligating the anomalous ones, and close the abdomen. Sometimes hysterectomy was imperative. This differed from and apparently was superior to the old method of uniting the sac to the incision and waiting weeks for its separation, since by this method the danger from sepsis was eliminated.

Dr. J. H. CARSTENS, of Detroit, had had one woman who went to term, a general practitioner having made the diagnosis. He operated on her in two stages. The placenta seemed to be attached to the intestines and the rectum, and he did not have the courage to remove it. He thought the best thing would be to leave the placenta alone, and so he removed the fœtus, separated the peritonæum with the sac, and drained. The woman was septic at the time of operation, and finally died from sepsis. The placenta did not separate. Little shreds came away through the abdominal incision.

Dr. HARSHA had never heard satisfactorily explained the cause of the intense pain that came on in cases of tubal rupture. The extent of pain and the broad radiations of it were great in comparison with the very small area apparently involved. A woman with tubal rupture suffered pain from her chest to her thighs—sometimes, at least. The broad radiations, with the intense character of the pain, made it almost impossible to get from these patients a rational explanation or history. These were the cases in which he believed a good dose of morphine was indicated. It would first abolish the cardinal or reflex pains to a certain degree and helped to localize the trouble. Second, it would limit the hæmorrhage, but before administering morphine one should observe carefully the character of the pain, the extent of the radiations, the time, and the urgency of the condition. After recognizing these, morphine would answer two indications, namely, to relieve the shock and put the patient in a better condition for operation, and to some degree arrest the hæmorrhage.

Dr. BARRETT said in regard to dealing with extrauterine pregnancy that was advanced, we found that in the early months the ovum was not considered. The probabilities were that, so far as the ovum was concerned, it would die, and the chances were that it would kill the woman sooner or later. A few years ago we should have said that at any time during the extrauterine pregnancy, early or late, the ovum should be removed at the earliest possible moment. The teaching had been that if the ovum had passed the fifth month, or along about there, we should wait for viability. He would be inclined yet, even in spite of that teaching, to remove the ovum when found, if it had reached a viable period, looking to the interest of the child and mother.

Requirements and Limitations of Nitrous Oxide and Oxygen Anæsthesia.—Dr. CHARLES K. TETER, of Cleveland, stated that the greatest advancement in general anæsthetics made in recent years had been the development and use of nitrous oxide and oxygen in major surgery, and in general surgery he had seen within the past few years nitrous oxide and oxygen come from a very limited use to one of almost unlimited application. He had been one of the foremost in advocating the superiority of nitrous oxide and oxygen as an anæsthetic. He had been compelled to do so because of the almost phenomenal success he had had with it. He had administered nitrous oxide and oxygen over sixteen thousand times in all conditions and for almost every conceivable operation, and, having had this practical experience, which alone was essential to appreciate the excellency of this agent, he wished to give the profession the benefit of it. It was freer from subsequent complications than any other general anæsthetic known. It was by far the most difficult general anæsthetic to administer, because of the following reasons: 1. The physical properties of nitrous oxide were such that this gas must be given from eighty to ninety per cent. pure, in order that a sufficient saturation of the blood might be had to produce that change in the nerve cell which brought about the anæsthetic state. 2. The anæsthetic properties of nitrous oxide and oxygen were extremely evanescent. The patient could pass from complete surgical anæsthesia to a conscious state within sixty seconds. The extreme rapidity of induction and elimination made the administration of this anæsthetic difficult. 3. Muscular tone was maintained to a much greater extent than it was under ether or chloroform, due probably to an increased per cent. of carbon dioxide in the blood.

The requirements for the proper administration of nitrous oxide and oxygen were: 1. A thorough understanding of the technique of administration and action of nitrous oxide and oxygen. 2. The apparatus must be accurate, have attachments for the administration of other general anæsthetic agents, and be easily sterilized.

Dr. BREMERMAN stated that in his special work, which dealt entirely with the bladder, ureters, and kidney, or conditions involving the genitourinary tract, he had employed as a general anæsthetic a combination of nitrous oxide gas and oxygen exclusively during the last two or three years. As it became necessary to perform major surgical operations upon the aged, particularly for the removal of the prostate, he could not recommend more highly any other anæsthetic. It produced none of the untoward after effects, such as nausea and vomiting. The patient was usually awake before he left the operating room. It had a great tendency to reduce the shock of the operation by shortening the length of the anæsthesia, and in his hands it had given perfect satisfaction.

Dr. FENTON B. TURCK, of Chicago, stated some years ago he conducted a series of experiments on animals with chloroform and ether with a view of determining the changes that occurred in the blood. It was found by these experiments that there was a loss in the antibodies and ferments in the blood, and that there was diminished resistance to bacteria, as was shown by the agglutinins, precipitins, and other substances which were found in the antibodies in the blood. It was found that those animals went into shock very easily in which there was a lowered condition of the blood. These experiments showed the effects of ether and chloroform on the serum itself, and two conclusions were arrived at, one being that there was an actual direct chemical effect on the serum, and the other was that biological changes took place and acted on the cells as toxines.

Acetabular Fracture with Intrapelvic or Central Dislocation of the Femoral Head. — Dr. William Fuller, of Chicago, detailed two cases of this class of fracture and presented for consideration a few points in a general way pertaining to this important but, as yet, imperfectly understood subject. So close was the relation between fractures and the changes that took place in the bone, whatever they might be, that all such injuries resulting from trivial or slight degrees of violence should be regarded as possibly belonging to this class. Efforts had been made by several observers to put the ætiology of fractures on a physical basis by studying the mechanical capabilities of bone. The great strength of the pelvic bones, their peculiar and powerful articulations, and liberal muscular supply were factors which, singly and combined, contributed much to the neutralization of all forms of direct violence exerted on this portion of the body. While Katz's theory of the mechanism of certain acetabular fractures would probably hold good, it was also worthy of mention that the experiments of Kusmin's demonstrated that this fracture could or would not occur unless the force was applied with the femur in abduction. When the legs were kept parallel the acetabulum remained unfractured.

From impacted fractures of the femoral neck central dislocation of the femoral head might be distinguished by the age of the patient and the comparatively high degree of injury in the latter instance. The remarkably sunken appearance of the greater trochanter and its slightly altered relation to Nélaton's line were points which distinguished the dislocation. The certainty with which the femoral head might be palpated in either of the anterior dislocations of the femur would serve to distinguish any one of these dislocations from a central one. In the dorsal dislocation, especially one above the obturator internus tendon, the trochanter was far above Nélaton's line, the thigh was adducted and flexed, and the axis of the dislocated femur crossed the lower end of the opposite one. Moreover, in the simple dislocation all movements would be less free than when the head and neck occupied a central position. It was not intended that the symptoms of acetabular fracture as here given were in the least to minimize the importance of the radiograph, but that each and every manifestation of all hip injuries of whatever nature should be carefully and cautiously considered. In no instance should the clinical findings settle the diagnosis, as they were frequently misleading, and the conclusions based thereon should invariably be corroborated by the röntgenologist. In case of failure to replace the head of the femur within the acetabulum, operative interference might offer the only hope of satisfactorily dealing with such a condition; but the particular type of operation and the advantages to be gained by it would depend much upon factors opposing the reduction.

The Rôle of the Bacillus Coli Communis in Acute and Chronic Dilatation of the Stomach.— Dr. Fenton B. Turck, of Chicago, presented some facts with reference to the rôle of the *Bacillus coli* in the gastrointestinal tract in producing lesions in the liver, kidney, stomach, and other organs. Experiments were begun with intravenous and intraperitoneal injections into dogs, rabbits, guineapigs, and rats. The results obtained were variable and inconstant. On feeding animals with bouillon cultures of the *Bacillus coli* daily over a period ranging from three to fourteen months, lesions were found in the stomach, duodenum, liver, kidney, brain, and spinal cord, varying according to the methods, quantity, and character of culture. It was found that animals fed with cultures of *Bacillus coli* would acquire acute or chronic dilatation of the stomach by overworking or overloading that organ. Examination of the blood showed that it remained sterile during the experiments, and the heart's blood at death was also sterile. In feeding cultures of the colon bacillus, pronounced changes were revealed in the blood and tissues. Agglutination of *Bacillus coli* by the dog's serum was noted; hæmolysis of the blood was evident; and cytolysis and autocytolysis of the cells of the mucous membrane of the stomach, kidney, liver, and other organs were marked on microscopical examination. The picture was not one of reaction to an infection, but rather of a systemic condition of induced cellular change. To obtain spontaneous acute or chronic dilatation of the stomach in animals, it was necessary first to feed the animals with cultures of *Bacillus coli* over a long period of time, followed by overuse of the stomach, especially increasing the intragastric pressure. Acute and chronic dilatation of the stomach was due to the fatigue of the gastric muscles. The author pointed out the indications for treatment in acute dilatation of the stomach. The usual methods of treatment were gastric lavage; diet, frequent but light meals; drugs, such as tonics, laxatives, alkalies, or acid, as indicated; electricity and exercise; hydrotherapy, balneology, rest, and recreation. In case of failure of these methods, a surgical operation was indicated. For the last seventeen years he had followed these indications and methods: 1. Reduce the fatigue of the gastric muscle by rest, followed by appropriate exercise of the gastric muscle, inducing normal peristalsis. 2. Sterilize, as far as possible, the gastrointestinal tract. 3. Restore the integrity of the splanchnic circulation.

Gastrostomy as a Curative Measure per se in Nonmalignant Strictures of the Œsophagus.— Dr. Eastman, of Indianapolis, stated that the directly beneficial effects of gastrostomy in cases of so called benign strictures of the œsophagus were not generally appreciated. We had been too slow to break away from old notions, developed in the preaseptic era, when the performance of gastrostomy was attended with considerable danger.

Ewald, in discussing a report of successful dilatation of a diphtheritic stricture by Rosenheim, referred to a peculiar observation which he had made in dealing with such benign stenoses, namely, the remarkable circumstance that cicatricial strictures for which gastrostomy had been done nearly always improved steadily after the stomach fistula had been provided and food had been introduced through the fistula instead of through the gullet; the stricture gradually developed a larger calibre without any other treatment whatsoever. Ewald explained these phenomena in the following manner: After the gastrostomy was done it became possible to fill the stomach with food. The pull of the full stomach downward gradually stretched the elastic œsophagus to some degree. When the stomach became empty the downward pull ceased; then the pressure of the food mass above the stricture had its effect upon the stretched and more yielding strictured segment. More compact masses of food might then squeeze through. The explanation of the phenomena given by Ewald could hardly be applied to all cases. After the swallowing of a hot or caustic fluid, the mucosa of the gullet might become deformed in many ways. Among many interesting deforming processes were, for example, the complete castlike separation of the mucous membrane described by Strauss, the œsophagitis desiccans superficialis of Rosenberg, and œsophagitis exfoliativa. In these conditions, after the mucosa had become loosened from the underlying tissues and thrown into folds or ridges or pockets, it was easy to understand that the passage of food or of a bougie must be attended with great mechanical difficulty. It also seemed fair to believe that the downward traction due to the filled stomach must have the effect in some instances of smoothing the valvelike folds and irregularities of the loosened membrane, thus permitting the passage of food through a previously impassable œsophageal lumen.

Gastrostomy was curative *per se* for another and more important reason. The rest afforded the œsophagus was of the greatest value in allaying the inflammation which preceded or attended practically all benign strictures. If ulceration was present, the passage of food or, what was worse, the arrest of food, with consequent fermentation, must maintain or increase the activity.

Fracture-Dislocation of the Atlas and Axis.—Dr. Carl E. Black, of Jacksonville, Ill., reported a case in which operative reduction was adopted. He called attention to the essential diagnostic points and gave some reasons why operative interference had not been adopted more frequently. He summarized the treatment of such injuries as follows: Immediate reduction under an anæsthetic. Walton had his patient sit in a chair while he turned the head still farther from the dislocated side. The head was then tilted to the sound side and extended while the column was rotated back into place. Hueter's method by rotation might be used. When the atlas was dislocated, before any method of reduction was undertaken, we should be sure that the odontoid process was not fractured. If the odontoid process was fractured, we were advised by some to follow the second indication and place the patient in a plaster cast, which would immobilize the seat of injury until healing could take place, and then reduce the deformity. The objections to this plan were that it failed to give the patient any opportunity for relief before degeneration of the cord could take place, and subjected him to further pressure from callus, and, finally, it would usually be found impossible to effect reduction after so long a time. The third plan was operative interference. While considerations of the cord were all important in such injuries, we should not be deterred from making every reasonable effort to restore the dislocated or fractured spinal vertebræ, because many questions regarding the degeneration and regeneration of the cord were in the stage of controversy and remained unsettled. It would seem to be our plain duty to effect a restoration of the bony column as far as it could be done without further endangering the cord, except in those cases where the cord was hopelessly crushed beyond the possibility of the recovery of lost functions. The mechanical difficulties were great and often insurmountable, but perseverance with reasonable efforts to overcome them would certainly tell in time. It was a reasonable proposition that an injured cord had a better chance in a spinal canal with sufficient room than it had when held under even mild compression. For this reason the second indication should usually be omitted and the injured parts exposed thoroughly. If the case was one of dislocation, efforts at reduction could be repeated under the direction of the eye and finger, and failing in this a laminectomy could be done. The mistake in the treatment of a case reported was a failure to appreciate the compression produced by the posterior arch of the atlas.

Hygroma of the Testicle.—Dr. Charles M. Harpster, of Toledo, in his paper stated that a hygroma was essentially a serous cyst. The bacillus of tuberculosis was often found, and the hygroma, if a true one, always contained hard caseous masses and rice bodies. A true hygroma of the testicle and cord was rare. The case he related was that of a man, forty-five years of age, who for a number of years suffered from a hydrocele, and this was frequently tapped by his family physician. Some months ago it was tapped and considerable blood and some pus were withdrawn. This alarmed the patient, and in consultation with the attending physician he found the testicle considerably enlarged and very painful, with some slight general disturbance. The cord and testicle were removed. Tubercle bacilli were found in the rice bodies and tissue of the sac. Syphilis undoubtedly had been contracted, but denied by the patient.

Dr. Richard Dewey, of Wauwatosa, Wis., reported a case of manic depressive insanity with satyriasis, which was complicated by an abscess of the appendix. The starvation treatment was resorted to, followed by evacuation of the abscess and recovery.

Dr. Frank Smithies, of Ann Arbor, Mich., discussed some of the newer methods for the detection of tubercle bacilli, with particular reference to the so called antiformin method.

(*To be continued.*)

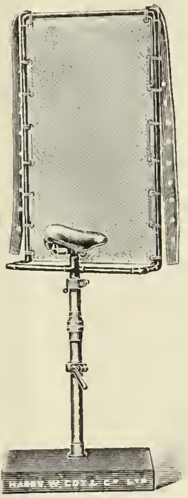
Letters to the Editor.

DR. AMEDEE GRANGER'S UNIVERSAL X RAY FRAME.

14 WEYMOUTH STREET, PORTLAND PLACE, W.,
LONDON, *October 7, 1910.*

To the Editor:

I was greatly interested in the account of this ingenious apparatus in your *Journal* on September 10th. Dr. Granger describes the patient as seated on a high stool in order that he may be turned completely round and placed in the anterior, posterior, lateral, or oblique position. I could not help being struck with the fact that the revolving seat and lead lined screen described by me (*Archives of the Röntgen Ray*, August, 1909) are perfectly adapted for use in conjunction with Dr. Granger's apparatus. The lead lined screen supplies protection for the lower part of the body, and the clamps which fit into the top of this screen can support either the fluorescent screen or the photographic plate. The oblique views are obtained with the greatest ease, and the seat can be clamped in any position (anterior, posterior, or oblique) by a single turn of the lever. The revolving seat is perfectly adapted for all examinations of the chest and abdomen.



ALFRED C. JORDAN, M. D.,
Medical Radiographer Guy's Hospital and the Royal Hospital for Diseases of the Chest.

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Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Practitioner's Case Book. For Recording and Preserving Clinical Histories. Prepared and Arranged by the Editorial Staff of the *Interstate Medical Journal.* St. Louis: Interstate Medical Journal Company, 1910. Pp. 239.

The editors of this case book remark very rightly in the preface that there is "hardly any practice in medicine of so great an importance as that of recording and preserving such notes of cases as the careful and observing physician wishes from time to time to restudy." They have succeeded in bringing out a practical book, one which shows the study and thought spent on it, one that will be of great help and value to the observing practitioner as well as to the writer on medical subjects.

Differential-diagnostische Tabellen der inneren Krankheiten. Von J. CEMACH, in Wien. München: J. F. Lehmann, 1910.

Cemach has prepared a condensed list of the distinctive diagnostic signs of diseases arranged in tabular form. We thus find in his pamphlet twenty-one tables in which he gives the symptomatology of the diseases of the heart and vessels, the nose, larynx, bronchi, pleura, lungs, mouth, fauces, œsophagus, stomach, intestine and peritonæum, liver, and gallbladder, kidney, bladder, of the infectious diseases, of the diseases of the blood, of disordered metabolism, of the diseases of the nerves, spinal cord, brain, and its membranes, and of the functional nervous diseases.

Transactions of the American Urological Association. Eighth Annual Meeting, at Atlantic City, N. J., June 7 and 8, 1909. Edited by CHARLES GREENE CUMSTON, M. D. Brookline, Mass.: Riverdale Press, 1910.

Very little can be said about a volume of *Transactions* which appears a year after the meeting of the society in question. The papers contained in this volume have been published in the current literature of the year 1909, and therefore need no elaborate comment. As is the case with many volumes of this sort, the various papers are of very unequal merit, some of them reaching the height of classical contributions, while others present the earmarks of mediocrity, so that he who runs may read them. On the whole, however, the tone of the volume is of a high character, and it reflects credit upon the association.

Hookworm Disease. Ætiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment. By GEORGE DOCK, A. M., M. D., Professor of the Theory and Practice of Medicine, Medical Department, Tulane University of Louisiana, New Orleans, and CHARLES C. BASS, M. D., Instructor of Clinical Microscopy and Clinical Medicine, Medical Department, Tulane University. Illustrated with Forty-nine Special Engravings and a Colored Plate. St. Louis: C. V. Mosby Company, 1910. Pp. 250. (Price, $2.50.)

Only a few years ago, up to 1901, hookworm disease was not known to us in the United States, and now medical science has not only found that the parasite exists in a large part of our country, but it has also demonstrated that the disease may be looked upon, in the South, as one of the greatest destroyers of life and the most important cause of physical and mental degeneration. In the middle of the last century—to be exact, in 1838—hookworm disease was first described in modern medicine by Duvini as existing in Italy, and in 1845 von Siebold in Germany gave the parasite a place in zoology among the *Strongylidæ*. Germany and Belgium have found that it seriously affects their mining industry, and these countries have devoted an immense amount of labor and expense to eradicating it. In all the tropics it was known to exist. We, in the United States, thought that on account of our superior mode of living and greater personal cleanliness, there would not be any soil for the parasite, even if imported by immigrants. But it has been found that the parasite in the United States belongs to a new species. In 1899 hookworm disease was found to be common in Puerto Rico, 90 per cent. of the rural population being affected.

Dock and Bass's work is very timely. The book contains in ten chapters all our knowledge of the disease. Beginning with an historical sketch, we are led up to the geographical distribution, and the zoological features are then brought out. The modes of infection are described in Chapter IV, while pathology, symptomatology, diagnosis, prognosis, and prophylaxis have each a separate chapter. The last chapter gives the treatment. On account of the terrible loss of energy and even life caused by it, all physicians should become acquainted with hookworm disease, and this book will be the best guide for the study of the disease.

Das Kystoskop. Eine Studie seiner optischen und mechanischen Einrichtung und seiner Geschichte. Lehrbuch für Aerzte und Studierende. Von Dr. Otto Ringler, Spezialarzt für Urologie in Berlin, ehemaligem Privatassistenten des geheimen Medizinalrats Weil. Professors Dr. Max Nitze. With 98 illustrations in the text. Leipzig. Werner Klinkhardt. 1910. Pp. x-194.

This monograph is devoted to the theory of the cystoscope, the application of this theory to the construction of the instrument, and an historical review of the development of instruments for the illumination of the bladder. The book presents but little of practical interest to the cystoscopist, but should appeal strongly to those few workers who are concerned in the study of the construction of cystoscopes and the constant improvements which are in progress in this field.

The first part is purely theoretical, dealing with mathematical optics as applied to cystoscopes. Here the author has drawn largely upon the work of the well known physicist, M. von. Rohr, as well as upon the investigations of the Zeiss laboratory at Jena. It is by interesting the scientific workers of the Zeiss establishment in the cystoscope that the author has, as he believes, opened a new and promising field for this instrument. Hitherto the cystoscope has been in the hands of what Ringleb calls "the groping optical worker," i. e., the optical results have been gained empirically by groping in the dark till the right combination was struck.

In the second part the theoretical principles are discussed in connection with what the author thinks is the ideal cystoscope,—one of his own design, in which he has incorporated some of the new ideas. One of these is the use of a disk with five dioptric lenses, interchangeable, as is the ophthalmoscope. This disk is fastened to the ocular end of the cystoscope and serves to correct the observer's refractive errors. By the use of this disk the field of vision is made smaller, but the definition of the objects seen is greatly enhanced. A catheterizing and an operating cystoscope are also described by the author, these instruments being improved patterns of the Nitze-Albarran type.

In the historical section a rather unsuccessful attempt is made to cover the history of cystoscopes. The cystoscope has been materially improved and a number of original features have been added to it by American workers. Yet, with the exception of one or two very brief references, some of them deprecatory, Ringleb does not give this country any credit for work along this line. The same, however, is true of France, the briefest mention being made of cystoscopic development in that country. Nothing is said of the "direct method" of catheterism, and no mention is made of the recent improvement in the cystoscope devised by Buerger, an instrument which certainly deserves full description in a work of this kind.

The book contains a mass of valuable material, its only fault perhaps being the evident tendency to bring out the author's personal work at the expense of a systematic and thorough presentation of the subject from every viewpoint.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume IV. Gynæcology. Edited by Emilius C. Dudley, A. M., Professor of Gynæcology, Northwestern University Medical School, etc., and C. von Bachellé, M. S., M. D., Assistant Professor of Obstetrics, Chicago Polyclinic and College of Physicians and Surgeons, etc. Series 1910. Chicago: The Year Book Publishers, 1910. Pp. 230. (Price, $1.25.)

This little volume contains, as is usual with those of the series, a review of the work in its department for the year 1909. The topics are conveniently divided and subdivided, and a complete index makes reference easy. Specialists as well as physicians in general practice find these volumes useful, as they present, in condensed form, the work of the world in the various specialties.

MEDICOLITERARY NOTES.

The Splendid Pawn, by Eleanor Stuart, in the October *Pearson's*, is Galvin, M. D., who was inspired by "lust to be something better than a mediocre medical man under contract to the British government in Bustorah, E. A." Love for a girl, however, seems to have had considerable effect on the hero's interesting fortunes. In Whim, by Inez G. Thompson, we meet some of those disagreeable Americans who are forever referring to "our set." Sets here last scarcely a generation. Is Your Dog Going Mad? asks Arno Dosch, and shows the possibility of an answer in the affirmative; twenty mad dogs have been caught in New York in one month. Kissing dogs, besides being of doubtful taste æsthetically, is distinctly dangerous practically. In this issue are several articles of political importance to physicians.

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The New Mind Cure Based on Science, by H. Addington Bruce, in the October American, will show many astonished persons that the medical profession is, as usual, well in advance of all the amateur hypnotists and healers in the exact use of mental suggestion. Livery in America, by Jesse Lynch Williams, is a highly amusing satire, the perusal of which ought to result in acute yellow atrophy of the livery throughout the United States. John Galsworthy's epoch making drama, Justice, is concluded. Physicians who have practically abandoned theatre going from long experience with wretched "shows" and untrustworthy press notices will be pleased to learn from Walter Prichard Eaton that the backbone of the theatrical trust is, if not broken, rhachitic to the last degree. The reaction on the part of the long muzzled critics is likely to be great, and for a time they may find it difficult to be just. We mention such things because physicians, from concentration upon their work, suffer greatly from impositions on the public generally. They lack the time required to investigate humbug affecting them as citizens, being busy suppressing various kinds that become directly entangled with their professional work.

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It is averred that the influence of the daily press is waning and that the magazine is succeeding as the arbiter of public opinion. The *Ladies' Home Journal*, in its October issue, continues its efforts to make women wear common sense clothing, to reserve gowns with trains, for instance, for house wear only. If it succeeds, we may conclude that the sceptre has in reality passed over to the magazine.

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In the *North American Review* for October Dr. Luther Halsey Gulick discusses Exercise and Rest; he advises that exercise should always be combined with amusement or taken unconsciously while the individual is interested in some other object. In the October *Physical Culture* E. L. Mann pleads for the revival of the walking stick in the hands of pedestrians. This is in line with Dr. Gulick's suggestions, for the stick gives the wrist continuous exercise, and when the "wearer" gets out into the country he can brandish his cane freely and so cultivate the muscles of the arm and chest, being the while unconscious of anything but his appearance of distinguished leisure.

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In *McCall's Magazine* for October R. D. Nugent, in urging the trite arguments as to health being largely a matter of common sense, states that brain fag induces nervous dyspepsia. Is that true, or does the converse proposition express the fact?

* * *

Havelock Ellis, the distinguished writer on various obscure problems in alienism, discusses in the October *Atlantic* the interesting subject of Aviation in Dreams. It is curious, as the writer remarks, that dreams of flying are common, but not dreams of floating in the water. While we no longer believe that dreams contain any supernatural revelations, we are inclined to think that persistent dreaming of a certain part of the body signifies the occurrence of beginning pathological changes in that part. We have in mind a patient who used to have an unpleasant dream of his legs rolling up ropewise under him; in the course of a physical examination some time later, an unsuspected condition of varix was disclosed. Once upon a time the dream of the loss of a tooth was believed to foretell the imminent death of a near relative. We should advise any one who persistently dreams of such a loss to hie him to the dentist in order to check an incipient pyorrhœa alveolaris, which might very possibly herald its advance by stirring up the depths of subconsciousness.

* * *

There are now so many magazines that devote their pages to fiction of a distinctly inferior rank, by which we mean stories that crowd incident on incident without much regard as to probability and without any as to style, that we must predicate a vast reading public devoid of any desire but oblivion of their surroundings. Such reading is nothing more than a phase of narcomania. Soon we may have various theories concerning the treatment of this new malady, some advocating a gradual reduction of the drug, others, more brutal, insisting on its instant withdrawal, with the substitution of tonics, Macaulay, Addison, Thackeray, Dickens. Withdrawal might be managed through Hall Caine and Marie Corelli, in decreasing doses. Relapses are likely after either method. *Adventure*, a magazine whose first number appears in October, occupies a place between the class of publications we have mentioned and those of the higher ideals. It contains one terrific blood and thunder story of prison life and poison by John I. Cochrane, M. D., besides tales from more practised writers.

* * *

A well known clergyman who writes for an evening paper recently referred, specifically enough without directly naming it, to the practice of masturbation among young people. The reverend gentleman thinks the State ought to pass laws on the subject. Intelligent comment on this suggestion seems to fail us. There is undoubtedly a reforming type of mind that believes that, once a law can be placed upon the statute books, all further action is superfluous in the case of any habit, which may or may not be harmful, but to which it objects; it seems to attribute to law a sort of automatic enforcing power. What is really wanted is a new kind of education, individual and scientific, by teachers who have direct knowledge of their subjects and not a mere bowing acquaintance acquired from books.

NEW PUBLICATIONS.

Hartmann, Henri.—Gynécologie opératoire. Avec 422 figures dans le texte dont 80 en couleur. Paris: G. Steinheil, 1911. Pp. vi-498. (Price, 18 francs.)

Schäfer, E. A.—The Essentials of Histology. Descriptive and Practical. For the Use of Students. Eighth Edition. Philadelphia and New York: Lea & Febiger, 1910. Pp. xi-571. (Price, $3.50.)

Park, William Hallock, and Williams, Anna W.—Pathogenic Organisms. Including Bacteria and Protozoa. A Practical Manual for Students, Physicians, and Health Officers. Fourth Edition, Enlarged and Thoroughly Revised, with 196 Engravings and Eight Full Page Plates. New York and Philadelphia: Lea & Febiger, 1910. Pp. viii-670. (Price, $3.75.)

Stewart, G. N.—A Manual of Physiology. With Practical Exercises. With Colored Plates and 450 Other Illustrations. Sixth Edition. New York: William Wood & Co., 1910. Pp. xx-1064. (Price, $5.)

Whitman, Royal.—A Treatise on Orthopædic Surgery. Fourth Edition, Revised and Enlarged. Illustrated with 601 Engravings. Philadelphia and London: Lea & Febiger, 1910. Pp. xii-908.

Transactions of the American Association of Obstetricians and Gynæcologists. Volume XXII. For the Year 1909. Pp. lxii-329.

Prudden, T. Mitchell.—The Story of the Bacteria and Their Relation to Health and Disease. Second Edition. Revised and Enlarged. Illustrated. New York: G. P. Putnam's Sons, 1910. Pp. 232. (Price, 75 cents.)

Prudden, T. Mitchell.—Dust and its Dangers. Second Edition. Illustrated. New York: G. P. Putnam's Sons, 1910. Pp. 113. (Price, 75 cents.)

Stiles, Charles Wardell.—The Taxonomic Value of the

Microscopic Structure of the Stigmal Plates in the Tick Genus Dermacentor. Hygienic Laboratory, Bulletin No. 62. Washington, D. C.: Government Printing Office, 1910. Pp. 72.

De Lee, Joseph B., and Stowe, Herbert M.—The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume V. Obstetrics. Series 1910. Chicago: Year Book Publishers, 1910. Pp. 230. (Price, $1.25.)

Billings, Frank, and Salisbury, J. H.—The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume VI. General Medicine. Series 1910. Chicago: Year Book Publishers, 1910. Pp. 352.

McFarland, Joseph.—Biology. General and Medical. With 160 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 440. (Price, $1.75.)

Forty-sixth Annual Report of the Trustees of the Boston City Hospital, Including the Report of the Superintendent upon the Hospital Proper, the South Department for Infectious Diseases, the Haymarket Square Relief Station, the East Boston Relief Station, the Convalescent Home at Milton Lower Mills, and also the Medical and Surgical Statistics, House Rules, with Rules for Admission, Discharge, and Government of Patients, etc. For the Forty-sixth Year. February 1, 1909, to January 31, 1910, inclusive. City of Boston: Printing Department, 1910. Pp. 190.

Annual Report of the Chief of Bureau of Manufactures to the Secretary of Commerce and Labor for the Fiscal Year Ended June 30, 1910. Washington: Government Printing Office, 1910. Pp. 23.

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Miscellany.

The Encyclopædia Britannica.—The University of Cambridge has acquired the copyright of the *Encyclopædia Britannica*, and is about to publish, at the University Press, an entirely new edition. As stated in a circular, it is more than 140 years since the famous *Encyclopædia Britannica* was first planned by "a Society of Gentlemen in Scotland." The first edition began to appear in 1768, and was completed, in three volumes, in 1771. Since then ten editions have been published, the last one having been issued in 1902 by the *Times*. Preparations for the eleventh edition were begun by the *Times* in May, 1903. The work was entrusted to Hugh Chisholm, one of the editors of the tenth edition. The eleventh edition of the *Encyclopædia Britannica* will be issued as a complete work, in twenty-eight volumes, by the University of Cambridge. The most important of the new features which will mark this issue of the *Encyclopædia Britannica* by Cambridge University is the fact that the whole of the work has been produced and will be published at the same time, about the end of this year, or at least in the first months of 1911. One other striking innovation that will be greatly appreciated by those who have occasion to consult the *Encyclopædia* is the diminution in thickness and weight of the volumes that has been accomplished by the use of India paper. It is estimated that a volume printed on that paper will be less than one third as thick as an ordinary volume containing precisely the same number of pages, and the average weight of such a volume will be less than one third that of a volume on the ordinary paper. This will make it much easier to find shelf room for the *Encyclopædia Britannica*, as the complete set of twenty-eight volumes on India paper will only occupy 2 ft. of linear space, as against nearly 6 ft. for the impression on ordinary paper; and for the first time the *Encyclopædia Britannica* will be found a comparatively portable work, as its total weight will not exceed 60 lb., while the ordinary paper impression weighs more than 200 lb.

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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending October 21, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Albay	Sept. 4-10	3	2
Philippine Islands—Batangas	Aug. 7-Sept. 10	522	349
Philippine Islands—Bulacan	Aug. 7-Sept. 10	101	79
Philippine Islands—Ilocos Sur	Aug. 14-20	10	7
Philippine Islands—Manila	Aug. 7-Sept. 10	70	54
Philippine Islands—Mountain	Aug. 14-20	1	1
Philippine Islands—Nueva Ecija	Aug. 7-Sept. 10	124	83
Philippine Islands—Pampanga	Aug. 7-Sept. 10	46	45
Philippine Islands—Pangasinan	Aug. 7-Sept. 10	395	347
Philippine Islands—Rizal	Aug. 7-Sept. 10	88	64
Philippine Islands—Tarlac	Aug. 7-Sept. 10	112	85
Cholera—Foreign.			
Austria-Hungary	Sept. 29		Present
Austria-Hungary—Budapest	Sept. 8-24	6	1
Austria-Hungary—Kalocsa	Sept. 23		Present
Austria-Hungary—Neusatz	Sept. 23		Present
Austria-Hungary—Pressburg	Sept. 23		Present
China—Amoy	Aug. 28-Sept. 3	1	
Germany—Freiburg	Sept. 9-13	2	
Germany—Marienburg	Sept. 13-15	3	1
India—Calcutta	Sept. 12-21		9
India—Madras	Sept. 3-9		6
Italy—General	Oct. 11-14	101	32
Italy—Monreal, province	Oct. 1	1	
Italy—Naples	Oct. 11-14	40	21
Italy—Palermo, province	Oct. 1	4	
Italy—Rome, province and city	Sept. 25-Oct. 1	5	
Japan—Kobe	Sept. 12-21	44	26
Japan—Osaka	Sept. 11-17	9	7
Java—Batavia	Sept. 3	15	9
Manchuria—Dalny	Sept. 4-10	1	
Persia—Erzeroum, vilayet	Sept. 11-22	272	168
Russia—General	Aug. 28-Sept. 3	9,899	4,405
Russia—General	Sept. 25-30	3,663	1,815
Russia—Akmolinsk, territory	Aug. 28-Sept. 3	282	155
Russia—Astrakhan, government	Aug. 28-Sept. 3	136	53
Russia—Baku, government	Aug. 28-Sept. 3	39	38
Russia—Baku, prefecture	Aug. 28-Sept. 3	100	37
Russia—Batum, territory	Aug. 28-Sept. 3	1	1
Russia—Bessarabia, government	Aug. 28-Sept. 3	18	12
Russia—Black Sea, government	Aug. 28-Sept. 3	9	4
Russia—Cronstadt, city	Aug. 28-Sept. 3	24	11
Russia—Daghestan, territory	Aug. 28-Sept. 3	330	105
Russia—Don, territory	Aug. 28-Sept. 3	568	314
Russia—Ekaterinoslav, government	Aug. 28-Sept. 3	568	326
Russia—Elisavetpol, government	Aug. 28-Sept. 3	12	9
Russia—Erivan, government	Aug. 28-Sept. 3	127	82
Russia—Iaroslav, government	Aug. 28-Sept. 3	102	67
Russia—Kars, territory	Aug. 28-Sept. 3	132	50
Russia—Kazan, government	Aug. 28-Sept. 3	161	89
Russia—Kertchienikale, prefecture	Aug. 28-Sept. 3	11	7
Russia—Kharkov, government	Aug. 28-Sept. 3	48	18
Russia—Kherson, government	Aug. 28-Sept. 3	524	205
Russia—Kief, government	Aug. 28-Sept. 3	555	219
Russia—Kostroma, government	Aug. 28-Sept. 3	176	73
Russia—Koutais, government	Aug. 28-Sept. 3	71	31
Russia—Kouban, territory	Aug. 28-Sept. 3	361	174
Russia—Koursk, government	Aug. 28-Sept. 3	287	152
Russia—Livonia, government	Aug. 28-Sept. 3	2	1
Russia—Minsk, government	Aug. 28-Sept. 3	52	14
Russia—Moghilev, government	Aug. 28-Sept. 3	17	4
Russia—Moscow, government	Aug. 28-Sept. 3	36	15
Russia—Nijni-Novgorod, gov'ment.	Aug. 28-Sept. 3	147	72
Russia—Nikolaie, prefecture	Aug. 28-Sept. 3	20	11
Russia—Novgorod, government	Aug. 28-Sept. 3	24	6
Russia—Odessa, prefecture	Aug. 28-Sept. 3	23	12
Russia—Orel, government	Aug. 28-Sept. 3	44	11
Russia—Orenbourg, government	Aug. 28-Sept. 3	653	278
Russia—Oufa, government	Aug. 28-Sept. 3	12	5
Russia—Oural, territory	Aug. 28-Sept. 3	43	15

Place.	Date.	Cases.	Deaths.
Russia—Perm, government	Aug. 28-Sept. 3	49	13
Russia—Podolia, government	Aug. 28-Sept. 3	102	32
Russia—Poltava, government	Aug. 28-Sept. 3	96	47
Russia—Rjasan, government	Aug. 28-Sept. 3	152	45
Russia—Rostow-on-Don, prefecture	Aug. 28-Sept. 3	25	5
Russia—Samara, government	Aug. 28-Sept. 3	760	274
Russia—Saratov, government	Aug. 28-Sept. 3	541	201
Russia—Sebastopol, prefecture	Aug. 28-Sept. 3	5	1
Russia—Simbirsk, government	Aug. 28-Sept. 3	222	116
Russia—Smolensk, government	Aug. 28-Sept. 3	28	3
Russia—Stavropol, government	Aug. 28-Sept. 3	91	46
Russia—St. Petersburg, city	Aug. 28-Sept. 3	429	168
Russia—St. Petersburg, government	Aug. 28-Sept. 3	62	37
Russia—Syr-Daria, territory	Aug. 28-Sept. 3	21	11
Russia—Tambov, government	Aug. 28-Sept. 3	425	205
Russia—Tauride, government	Aug. 28-Sept. 3	83	34
Russia—Tchernigov, government	Aug. 28-Sept. 3	65	30
Russia—Terek, territory	Aug. 28-Sept. 3	125	60
Russia—Tiflis, government	Aug. 28-Sept. 3	183	66
Russia—Tobolsk, government	Aug. 28-Sept. 3	50	18
Russia—Tomsk, government	Aug. 28-Sept. 3	78	15
Russia—Tourgai, territory	Aug. 28-Sept. 3	21	14
Russia—Viatka, government	Aug. 28-Sept. 3	16	12
Russia—Vitebsk, government	Aug. 28-Sept. 3	6	7
Russia—Vologda, government	Aug. 28-Sept. 3	57	24
Russia—Volhynia, government	Aug. 28-Sept. 3	2	1
Russia—Voronezh, government	Aug. 28-Sept. 3	484	244
Russia—Warsaw	Sept. 22		Present
Servia—Belgrade	Oct. 12		Present
Straits Settlements—Singapore	Aug. 28-Sept. 3	5	2
Turkey in Europe—Constantinople	Sept. 26-Oct. 2		20
Turkey in Asia—Samsoun	Sept. 18-24	1	
Turkey in Asia—Tizirk	Sept. 18-24	1	
Turkey in Asia—Trebizond	Sept. 11-24	97	46
Yellow Fever—Foreign.			
Mexico—Campeche	Sept. 25-Oct. 8	5	3
Venezuela—Puerto Cabello	Oct. 12		Present
Plague—Foreign.			
India—Bombay	Sept. 7-13		12
India—Calcutta	Aug. 21-27		10
Peru—Callao	Sept. 3	1	
Russia—Odessa	Sept. 20-26	7	1
Smallpox—United States.			
Alabama—Mobile	Oct. 2-8	2	
Colorado—Archuleta County	Sept. 1-30	1	
Colorado—Denver County	Sept. 1-30	16	
Colorado—Huerfano County	Sept. 1-30	4	
Colorado—Montezuma County	Sept. 1-30	1	
Colorado—Otero County	Sept. 1-30	1	
Colorado—Prowers County	Sept. 1-30	5	
Colorado—Saguache County	Sept. 1-30	7	
Colorado—Teller County	Sept. 1-30	4	
Indiana	Aug. 1-31	6	
Iowa—Linn County	Sept. 1-30	1	
Iowa—Polk County	Sept. 1-30	1	
Iowa—Warren County	Sept. 1-30	7	
Louisiana—New Orleans	Oct. 2-8	7	
Michigan—Bay County	Sept. 1-30	1	
Michigan—Benzie County	Sept. 1-30	1	
Michigan—Cheboygan County	Sept. 1-30	1	
Michigan—Emmett County	Sept. 1-30	5	
Michigan—Genesee County	Sept. 1-30	8	
Michigan—Gratiot County	Sept. 1-30	2	
Michigan—Manistee County	Sept. 1-30	4	
Michigan—Missaukee County	Sept. 1-30	3	
Michigan—Osceola County	Sept. 1-30	2	
Michigan—Saginaw County	Sept. 1-30	5	
Michigan—St. Clair County	May 1-31	43	
Michigan—St. Clair County	June 1-30	4	
Michigan—Tuscola County	Aug. 1-31	5	
Minnesota—Brown County	Aug. 1-7	1	
Minnesota—Faribault County	Aug. 8-14	1	
Minnesota—Hennepin County	Aug. 1-Sept. 4	11	
Minnesota—Mower County	Aug. 1-7	1	
Minnesota—Nicolett County	Sept. 12-18	1	
Minnesota—Ramsey County	Aug. 8-Sept. 18	9	
Minnesota—St. Louis County	Aug. 15-28	3	
Minnesota—Washington County	Sept. 5-11	1	
Minnesota—Watonwan County	Sept. 5-11	1	
Missouri—Andrew County	Oct. 2-8	6	
New York—Entire State	Aug. 1-31	9	
North Dakota—Cass County	Sept. 1-30	1	
North Dakota—Steele County	Sept. 1-30	1	
Oklahoma—Bryan County	Aug. 1-31	25	
Oklahoma—Caddo County	Aug. 1-31	5	
Oklahoma—Canadian County	Aug. 1-31	1	1
Oklahoma—Grady County	Aug. 1-31	7	1
Oklahoma—Nowata County	Aug. 1-31	6	
Oklahoma—Oklahoma	Aug. 1-31	2	
Oklahoma—Pittsburg County	Aug. 1-31		1
Oklahoma—Seminole County	Aug. 1-31	1	
Oklahoma—Sequoyah	Aug. 1-31	1	
Oklahoma—Tillman	Aug. 1-31	1	
Oklahoma—Tulsa County	Aug. 1-31	2	
Tennessee—Chattanooga	Oct. 2-8	1	
Wisconsin—Green County	Sept. 1-30	2	
Wisconsin—Grant County	Sept. 1-30	1	
Wisconsin—Iowa County	Sept. 1-30	3	
Wisconsin—Milwaukee County	Sept. 1-30	2	
Wisconsin—Waupaca County	Sept. 1-30	1	
Wisconsin—Sawyer County	Sept. 1-30	3	
Smallpox—Foreign.			
Canada—Kingston	Oct. 3	In vicinity	
Canada—Toronto	Sept. 11-17	1	
Canada—Victoria	Sept. 25-Oct. 1	1	
China—Shanghai	Sept. 5-11		2
Egypt—Alexandria	July 1-31		3
Egypt—Alexandria	Aug. 1-31	1	
India—Bombay	Sept. 7-13		1
India—Madras	Sept. 3-9		4
Russia—Moscow	Sept. 11-17	3	1
Russia—Warsaw	Aug. 1-6		7
Spain—Vigo	Sept. 18-24		1
Straits Settlements—Penang	Sept. 4-10	11	5
Straits Settlements—Singapore	Aug. 28-Sept. 3	13	5

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending October 19, 1910:

BECK, J. E., Pharmacist. Granted seven months' leave of absence without pay from October 20, 1910.

BOGGESS, J. S., Passed Assistant Surgeon. Granted one month's leave of absence from November 14, 1910.

DEVALIN, HUGH, Passed Assistant Surgeon. Granted thirty days' leave of absence from November 2, 1910.

DUFFY, B. J., Assistant Surgeon. Relieved from duty at Buffalo, N. Y., and directed to proceed to Tompkinsville, N. Y., and report to the commanding officer of the revenue cutter *Seneca* for duty.

GASSAWAY, JAMES M., Surgeon. Granted one month's leave of absence from October 7, 1910, on account of sickness.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Granted four days' leave of absence from October 26, 1910.

JACKSON, JAMES M., Jr., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 1, 1910.

MCLAUGHLIN, A. J., Passed Assistant Surgeon. Directed to report at the Bureau on special temporary duty.

MATHEWSON, H. S., Passed Assistant Surgeon. Granted one day's leave of absence October 12, 1910, under paragraph 189, Service Regulations.

RUCKER, W. C., Passed Assistant Surgeon. Directed to proceed to New York, N. Y., upon special temporary duty.

SPRAGUE, E. K., Surgeon. Granted fifteen days' leave of absence from October 28, 1910.

TAPPAN, J. W., Acting Assistant Surgeon. Leave of absence for twenty days from October 1, 1910, amended to read twenty days from October 5, 1910.

TERRY, M. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 1, 1910.

Board Convened.

Board of medical officers convened to meet at the Bureau, October 20, 1910, for the purpose of conducting a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Assistant Surgeon General J. D. Long, chairman; Assistant Surgeon Paul Preble, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 22, 1910:

ALLEN, J. H., Major, Medical Corps. Detailed to represent the Medical Department of the Army at the meeting of the Association of Military Surgeons, at Richmond, Va., November 1 to 4, 1910.

BLANCHARD, ROBERT M., Captain, Medical Corps. Ordered to Fort Thomas, Kentucky, for temporary duty during the absence of Major W. M. Roberts, Medical Corps.

CLARK, JOHN A., Captain, Medical Corps. Ordered to Fort H. G. Wright, N. Y., for duty during the absence of Captain Williams.

EASTMAN, WILLIAM R., Captain, Medical Corps. Upon expiration of his present sick leave of absence will proceed to New York City for duty as attending surgeon.

HANSON, LOUIS H., Captain, Medical Corps. Granted ten days' leave of absence to take effect upon his relief from duty at Hot Springs, Arkansas.

HOGAN, DAVID D., First Lieutenant, Medical Reserve Corps. Upon abandonment of Fort Schuyler, N. Y., will proceed to San Francisco, Cal., and take the first available transport to the Philippines, for duty.

Howell, Park, Captain, Medical Corps. Ordered to report on December 5, 1910, to Lieutenant Colonel J. D. Glennan, Medical Corps, President, Examining Board, at San Francisco, Cal., for examination to determine his fitness for promotion.

Kellogg, Preston S., First Lieutenant, Medical Reserve Corps. Ordered to Fort Yellowstone, Wyoming, for duty.

Krebs, L. L., Captain, Medical Corps. Ordered to report on December 5, 1910, to Lieutenant Colonel J. D. Glennan, Medical Corps, President, Examining Board, at San Francisco, Cal., for examination to determine his fitness for promotion.

Lambie, John S., Jr., Captain, Medical Corps. Granted leave of absence to include January 3, 1911.

Maus, L. M., Colonel, Medical Corps. Detailed to represent the Medical Department of the Army, at the meeting of the Association of Military Surgeons, at Richmond, Va., November 1 to 4, 1910.

Murray, Wilson, First Lieutenant, Medical Reserve Corps. Granted leave of absence for two months about November 4, 1910.

Nichols, Henry J., Captain, Medical Corps. Will proceed to Newark, N. J., in time to lecture on Pellagra before the Essex County Medical Society about November 22, 1910, and upon completion of this duty will return to his station.

Persons, E. E., Major, Medical Corps. Detailed to represent the Medical Department of the Army, at the meeting of the Association of Military Surgeons, at Richmond, Va., November 1 to 4, 1910.

Rich, Edwin W., Captain, Medical Corps. Upon arrival in the United States will proceed to Fort Mason, California, for duty and will report to the Commanding General, Department of California, for duty as Attending Surgeon, San Francisco, California.

Richards, Robert L., Captain, Medical Corps. Relieved from duty in New York City, upon expiration of his leave of absence, and ordered to the General Hospital, San Francisco, Cal., for duty.

Sweazey, Verge E., Captain, Medical Corps. Ordered to his home to await retirement.

Tasker, Arthur N., Lieutenant, Medical Corps. Upon being relieved as Surgeon of the *Sheridan*, ordered to the Presidio of San Francisco, Cal., for duty.

Walker, Thomas C., First Lieutenant, Medical Reserve Corps. Upon expiration of leave heretofore granted him will proceed to Fort Terry, N. Y., for duty.

Weston, Henry R., First Lieutenant, Medical Reserve Corps. Ordered to Fort Strong, Mass., for duty.

Williams, A. W., Captain, Medical Corps. Ordered to New York City for temporary duty as Attending Surgeon.

The following named captains of the Medical Corps are ordered to report on December 3, 1910, to Lieutenant Colonel H. P. Birmingham, Medical Corps, President of the Examining Board, at the Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for promotion: W. P. Woodall, C. C. Whitcomb, G. H. Crabtree, W. T. Davidson, H. M. Smith, and C. J. Bartlett.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 22, 1910:

Ames, H. E., Medical Director. Detached from command of the naval hospital, Puget Sound, Washington, and ordered to the naval training station, San Francisco, Cal.

Iden, J. H., Surgeon. Detached from duty at the Naval Hospital, Annapolis, Md., and ordered to the *Georgia*.

Kress, C. C., Assistant Surgeon. Commissioned an assistant surgeon, from October 5, 1910.

Lawrence, H. F., Assistant Surgeon. Ordered to duty at the naval hospital, Las Animas, Colorado.

McCullough, F. E., Surgeon. Detached from the naval training station, San Francisco, Cal., and ordered to the *Georgia*.

Norton, O. D., Medical Inspector. Ordered to duty on board the *California* as fleet surgeon of the Pacific Fleet; detached from the *California* and ordered to the *West Virginia*, as fleet surgeon of the Pacific Fleet.

O'Malley, J. J., Assistant Surgeon. Commissioned an assistant surgeon, from October 5, 1910.

Sheehan, R. F., Assistant Surgeon. Commissioned an assistant surgeon, from October 5, 1910.

Stuart, D. D. V., Jr., Assistant Surgeon. Ordered to the naval medical school, Washington, D. C., for instruction.

Births, Marriages, and Deaths.

Born.

Old.—In Washington, D. C., on Monday, October 17th, to Passed Assistant Surgeon Edward H. H. Old, United States Navy, and Mrs. Old, a son.

Porter.—In San Juan, Puerto Rico, on Wednesday, September 28th, to Passed Assistant Surgeon Frederick Eugene Porter, Jr., United States Navy, and Mrs. Porter, a son.

Married.

Cullen—McDonnell.—In Toledo, Ohio, on Wednesday, October 19th, Dr. James G. Cullen and Miss Mae E. McDonnell.

Ferrer—O'Donohue.—In New York, on Tuesday, October 18th, Dr. Jose M. Ferrer and Miss Marie M. Irene O'Donohue.

Hubbard—Stillwell.—In Brooklyn, on Thursday, October 20th, Dr. S. Elmore Hubbard and Miss Harriet May Stillwell.

Longwell—Berry.—In Troy, Pennsylvania, on Wednesday, October 12th, Dr. John P. Longwell and Dr. Matta L. Berry.

Moylan—Healy.—In Philadelphia, on Wednesday, October 26th, Dr. David John Moylan and Miss Helen Catherine Healy.

Died.

Abbott.—In Chicago, on Sunday, October 16th, Dr. Elera John Abbott, aged fifty-one years.

Auerbach.—In Denver, Colorado, on Friday, October 14th, Dr. Louis Auerbach, aged fifty-eight years.

Baldwin.—In Great Bend, Pennsylvania, on Monday, October 17th, Dr. William W. Baldwin.

Canniff.—In Belleville, New Jersey, on Tuesday, October 18th, Dr. William Canniff, aged eighty years.

Cook.—In Carrick, Pennsylvania, on Monday, October 17th, Dr. Charles Ballard Cook, aged thirty-one years.

Davidson.—In Philadelphia, on Tuesday, October 18th, Dr. Charles C. Davidson, aged sixty-two years.

Ensign.—In Waymart, Pennsylvania, on Monday, October 17th, Dr. Harvey M. Ensign, aged sixty-seven years.

Farnsworth.—In Fort Morgan, Colorado, on Wednesday, October 12th, Dr. John Alexander Farnsworth, aged thirty-nine years.

Fisher.—In Scranton, Pennsylvania, on Monday, October 17th, Dr. Charles H. Fisher, aged seventy-three years.

Fisher.—In Elmira, New York, on Tuesday, October 18th, Dr. William H. Fisher, aged fifty-six years.

Flynn.—In Warren, Michigan, on Saturday, October 15th, Dr. John C. Flynn, aged sixty years.

Gilday.—In Toronto, Ontario, on Wednesday, October 19th, Dr. William C. Gilday, aged twenty-eight years.

Godfrey.—In Cayuga, New York, on Monday, October 10th, Dr. Charles P. Godfrey, aged sixty-eight years.

Hines.—In Baltimore, on Monday, October 17th, Dr. William F. Hines, aged fifty-four years.

Keath.—In Schaeffertown, Pennsylvania, on Saturday, October 15th, Dr. James W. Keath, aged fifty-five years.

Kendall.—In Vancouver, British Columbia, on Saturday, October 15th, Dr. A. P. Kendall.

Leuschner.—In Mt. Clemens, Michigan, on Friday, October 14th, Dr. Richard Leuschner, aged fifty-two years.

More.—In Ionia, Michigan, on Thursday, October 13th, Dr. George W. More, aged twenty-eight years.

Nicholson.—In Green Bay, Wisconsin, on Sunday, October 16th, Dr. William G. Nicholson, aged forty-one years.

Walker.—In Philadelphia, on Wednesday, October 19th, Dr. James B. Walker, aged sixty-four years.

Wells.—In Brooklyn, on Thursday, October 20th, Dr. Thomas L. Wells, aged forty-nine years.

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Original Communications.

FURTHER OBSERVATIONS ON THE USE OF THE EHRLICH-HATA PREPARATION "606" IN THE TREATMENT OF SYPHILIS.*

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In the history of therapeutics there are few drugs which have called forth such intense and universal interest as the Ehrlich-Hata preparation, commonly known as 606. Scarcely more than half a year has elapsed since a wide experimentation with the drug was made possible through the desire of Professor Ehrlich to submit it to the most rigid clinical tests, and already an extensive literature has sprung up revealing results which are short of miraculous. By the time this paper goes to press some 12,000 to 15,000 patients will have been treated, a sufficient number to place the drug beyond the experimental stage and accord it a firm foothold in the therapy of syphilis. From these results it would seem that at last we have a remedy which is truly a specific, and if they withstand the test of time it will be safe to prophesy that before many decades we shall have under control a disease whose ravages are felt throughout the whole world.

It is not to a chance discovery that we owe this most important addition to therapeutics, but to the working out of a definite principle on the part of the Frankfort laboratory. Serum therapy having been found powerless to combat the protozoan infections, owing to the lack of the necessary production of antibodies, investigators turned to the field of synthetic chemistry for a substance which while exerting a specific action on the parasite would prove at the same time innocuous to the infected individual. This idea of specificity had been elaborated by Ehrlich in his work with dye stuffs showing that certain dyes introduced *intra vitam* into the organism exhibited a typical selective action in the tissues. From his pharmacological experiments and studies in immunotherapy, he was led to the view that drugs are also attracted by and bound to the protoplasm by certain atom groupings which he termed chemoreceptors. When it was determined that organisms could be attacked through certain chemicals for which they possessed a special affinity, it was next necessary to find a suitable substance which in doses large enough for a therapeutic effect would not simultaneously prove lethal or injurious to the host. Many hundreds of experiments with various dyes and arsenical compounds were made before a product was found whose parasitotropic and organotropic properties were so proportioned that while it brings about destruction of the parasite, its toxic effects on the host are practically *nil.* The drug which up to this time best fulfils these ideal conditions is dioxydiamidoarsenobenzol. It is a sulphur yellow powder, put up for distribution in vacuum tubes in single doses. Chemically it is a double salt of strongly acid reaction; its formula and the changes which it undergoes on the addition of reagents just before use have already been published in various articles dealing with this side of the subject.

Dose. As yet exactness in the amount of the remedy to be administered is lacking, and it is given by various clinicians in doses varying from 0.3 gramme to 0.7 gramme subcutaneously or intragluteally, or as much as 0.9 gramme if the combined intravenous and subcutaneous methods are employed. As high as one gramme and over has been given by Duhot without bad effects, but the tendency seems to be to approximate 0.6 gramme. I have never given over that amount. Children appear to tolerate from 0.02 to 0.09 gramme without any reaction. Michaelis gauges his dose by the body weight of the patient, giving one centigramme per kilo. The drug is not very toxic, 0.15 gramme per kilo being given to monkeys subcutaneously without harm. In Hata's experiments on animals by-effects, such as optic and vestibular nerve disease or other symptoms pointing to disturbance of the nervous system which had followed the use of atoxyl, arsacetin, and other arsenical compounds, were not encountered after treatment with 606. He also found that in rabbits infected with syphilis one tenth of the dosis tolerata will cure the disease in from two to three weeks and that even a minimum dose of one twentieth will bring about resolution, but after a longer time.

Methods of administration. The drug may be introduced into the system by injection deep into the muscles, under the skin, or directly into the circulation. The objections raised against the intramuscular method are the pain produced, the marked infiltration of the muscle, the slow absorption of the drug, and the possibility of encapsulation rendering it inert. In chickens which he treated in this manner, Hata found that the muscle became coagulated and formed a "depot" from which gradual absorption took place. Furthermore, in such animals immunity against reinfection lasted fifty days, whereas those injected intravenously were again susceptible to spirillar infection six days after. Schreiber, who is a strong advocate of the

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intravenous method, argues that with this deposit in the musculature there is great uncertainty as to the amount absorbed, while the dangers of sudden discharge into the blood stream or a chronic intoxication with the not remote possibility of the cultivation of arsenic fast strains are not altogether negligible factors. His first objection is not without reason, for in several cases that came to autopsy from other causes arsenic was still present in the gluteal muscle, in one case as late as thirty-six days after treatment. In the early cases treated by Nichols and myself the intragluteal method was employed, and it is my impression, although not founded on very exact comparison, that the solution injected in this way produced its effects more quickly than in the cases treated by the insoluble preparation of the drug after the manner of Wechselmann.

In favor of the intravenous method Schreiber gives the absence of pain, the more reliable dosage, and the quicker elimination which permits the administration of a second dose earlier than by the other mode of treatment. He did not find, as Ehrlich feared, a susceptibility on the part of the patient, but rather that a resistance had been acquired, the reaction being weaker to the second dose. He believes that he obtained quicker results by this method, in one of his cases the Wassermann reaction becoming negative in forty hours, and advises it especially for disease of the central nervous system, but in small doses.

Iversen prefers to combine the intravenous and intramuscular methods, giving from 0.4 to 0.5 gramme by the former, and forty-eight hours later from 0.3 gramme to 0.4 gramme by the latter. Intravenous injection is sometimes followed by chill, rise of temperature, nausea and vomiting.

The subcutaneous method has advantages over the intramuscular in minimizing the amount of pain and in the facility with which the substance could be removed should symptoms of intoxication arise. The skin should, however, be well nourished and a good fold picked up so that the remedy may be injected under and not into it, the latter giving rise to severe radiating pain. Abscess formation and necrosis are accidents which may follow the introduction of the drug in this way, but in about thirty cases which I have so treated, I have seen nothing suggestive of either.

Methods of preparation. One is impressed in surveying the literature by the lack of uniformity in the mode of preparation. The two most important ones are those of Alt and Wechselmann, several modifications of which now exist. These doubtless will be still further modified, for with our present technique the preparation of a single dose is quite a laborious undertaking requiring time and patience, as well as skill in chemical manipulation. A simplification is to be hoped for to admit of a more general application.

According to the original Alt method, the remedy is injected as an alkaline salt. The powder is rubbed up with 10 c.c. sterile water, to which is added normal sodium hydroxide solution until only a slight undissolved residue remains. More sterile water is added to make 20 c.c., and 10 c.c. is injected into each gluteal region.

Later methyl alcohol came into use, and Ehrlich advised moistening the salt with it or with glycol, then triturating with 15 c.c. sterile water and from 2 to 3 c.c. one tenth normal caustic soda solution. If an excess of alkalinity was present, one per cent. acetic acid was used to neutralize. As it was found that methyl alcohol is not without danger, it has been entirely abandoned.

The alkaline solution being productive of much pain, Wechselmann and Lange devised a method by which the drug is injected as a neutral suspension. Its technique is as follows:

The remedy is placed in a mortar and 2 c.c. or more of a ten per cent. caustic soda solution are added under continuous rubbing. When in solution glacial acetic acid is added drop by drop until precipitation ceases, when from 2 to 3 c.c. of sterile water are added and the reaction of the mixture tested. Its neutralization is brought about by one tenth normal caustic soda solution or one or two per cent. acetic acid. Formerly when this point was reached, sterile water was added to make sufficient bulk. Now, however, after neutralization the suspension is centrifuged, the supernatant fluid pipetted off, and enough normal salt solution added to make from 10 to 12 c.c. This is then injected under the scapula or between them in one or two places. Everything used in connection with the preparation should of course be sterilized. The skin too is rendered sterile as for surgical operation and just before injection is painted with tincture of iodin. For injection a 10 c.c. Luer syringe with a 16 or 17 gauge needle is employed. An aspirating needle may be cut down to the desired length of one and a half or one and three quarter inches.

Michaelis prepares the drug by dissolving it in hot water and adding 6 c.c. normal caustic soda solution and then acetic acid until neutral with phenolphthalein. It has been found, however, that the combination of 606 and acetic acid inhibits or destroys the action of phenolphthalein, so that it is more accurate to test the reaction with litmus strips.

Citron and Mulzer recommend the following simple method of preparation: In a syringe containing 606 pour hot sterile water to the 5 c.c. mark and shake until the mixture is in solution. To this add forty drops of a ten per cent. calcium carbonate solution (normal salt), a thick creamy emulsion ensuing, which is shaken thoroughly and from 5 to 6.5 c.c. injected intraglutineally.

After experience with both the alkaline solution and the neutral suspension, Junkermann is of the opinion that the method of Alt is superior both as to promptness and efficiency of action, and has therefore returned to this mode of preparation with a slight modification. He mixes 6 c.c. of sterile water with the powder in a separatory funnel, introduces twenty or thirty glass beads and shakes the mixture thoroughly. When in solution he adds drop by drop a fifteen per cent. caustic soda solution, until the resulting precipitate is again dissolved and the solution clear. The beads are washed with sterile water not to lose any of the preparation. The product is the soluble monophenalate, weakly alkaline. He injects from 8 to 10 c.c. intraglutineally.

In his article of August 23rd Alt refers to his original technique and says that before the drug was used in Magdeburg in January he and his coworkers had experimented with the various modifications and suspensions which have since come into use, but that the results were not in favor of abandoning the earlier method.

Several communications recently received by Dr. Flexner from the Ehrlich Laboratory emphasize the point that the alkaline solution is to be preferred to the Wechselmann suspension and deep injection into the gluteal muscles is advised. I am, therefore, at present employing this method and make use of the normal caustic soda solution or a weaker one to dissolve the drug.

More recently Kromayer, Wolf, and Volk advocated an emulsion in paraffin oil. According to these observers the virtues of the method are the permanency of the preparation and the practicability of treating outdoor patients.

Kromayer's directions are to rub up 606 with ten per cent. paraffin oil, then adding a sufficient quantity of water so that 1 c.c. of the emulsion will contain 0.1 gramme of the remedy. This should be protected from the light and before use shaken thoroughly. He treated 250 patients in this way and states that his results are as good and absorption and elimination about as prompt as with the other methods. The dose is given fractionally, patients receiving several injections of 0.2 and 0.1 gramme every day or every other day. He believes the dichlorhydrate is changed into the soda salt by the alkaline tissue juices.

When the drug is given intravenously Schreiber prepares it by adding from 10 to 20 c.c. sterile water and shaking until clear. This is followed by the addition of normal salt solution to make 100 c.c. Then for each 0.1 gramme of the drug he adds 0.7 c.c. normal caustic soda solution, and when the resulting precipitate is dissolved a quantity of physiological salt solution to make from 150 to 250 c.c. Iversen neutralizes the solution with one per cent. acetic acid and injects as much as one half litre.

Local and general reaction. In the majority of cases the injection is followed by more or less pain, which may be observed from the very beginning or may not occur for two or three hours afterward. In other cases the severest pain is not experienced until the second or third day, when the local reaction takes place along with elevation of temperature and symptoms of general malaise. In some patients pain from the onset or a few hours afterward is so severe as to necessitate the administration of morphine hypodermically. In exceptional cases it has persisted intermittently for a week or ten days. The swelling quite uniformly begins about the second or third day and increases for ten days to two weeks, after which it remains stationary for a week or so longer and then slowly subsides. It has not yet wholly disappeared in some cases observed six weeks after the injection was given. A certain amount of tenderness and surface hyperæmia accompany the swelling, but after a week or ten days this is not a noticeable feature. In fact, the part may be massaged with advantage at the end of this period, which manipulation facilitates the absorption of the inflammatory exudate. The temperature and pulse vary with the local reaction from normal to 100.5° F., exceptionally a degree or two higher. It is rare to observe any temperature at the end of the fourth day. In some patients no elevation of temperature whatever takes place. None of the patients under my care experienced any gastrointestinal disturbance or unpleasant symptoms of any nature, if we except the pain which was quite severe in two. In a few the injection was followed by an urticarial or erythematous eruption which lasted a few days. In one case erythema of the extremities was followed by exfoliation of the skin.

Jarisch-Herxheimer reaction. This phenomenon which manifests itself by local redness and swelling has been seen rather frequently by the continental observers, and is interpreted by many as evidence of too small a dose and indication for repeating it. It has, however, been observed by Herxheimer himself after large doses as well as small, and Gennerich found it in almost all of his cases even those treated with 0.65 gramme. It appears within a few hours after the injection, may last from twenty-four to forty-eight hours or even longer, the eruption often regressing with its subsidence. None of the patients treated by me showed this reaction, even with the minimum dose of 0.3 gramme.

Indications. Consonant with the theory of its action, 606 should be the remedy *par excellence* in active syphilis, finding its special indications in those stages of the disease where the lesion is due to the spirochætæ. This should include the early cases with initial lesions with or without secondaries, malignant syphilis, ordinary recurring active syphilis, and those cases which do not respond to mercury or where there is an idiosyncrasy against mercury and potassium iodide. The parasyphilitic affections in their incipiency may be benefited, but when secondary degenerative changes have taken place it would be unreasonable to expect a restoration of specialized tissue or function. For the present it would be well to limit the use of the drug to the specially suitable cases.

Results in early lues. Some of the most favorable effects of 606 have been seen in initial lesions, especially the eroded type, which may be healed over in forty-eight hours. The hypertrophic sclerosis requires a longer time; in these I have seen complete resolution in from ten days to three weeks. As old scars of chancres may retain the spirochætæ for years and start up a recurrence, Sieskind recommends the removal of these foci of infection by excision. In connection with the specific action of the drug, it is interesting to note that if a mixed infection is present, the ulcus molle will remain uninfluenced, the luetic induration alone yielding to the remedy.

Of the secondaries, the roseola shows a variable period of regression, the limits being one and twenty days. The papular eruption is a little more difficult to influence, the small variety more so than the large, requiring from four days to two or three weeks or longer; in some cases it remained unchanged. Condylomata disappear in from ten days to two or three weeks, and palmar syphilides in from one to four weeks. Brilliant results are obtained in malignant syphilis and in early ulcerating lesions; also in specific angina and mucous membrane plaques, of which no trace is left at the end of from two to three days to a week. In bone syphilis and gummata the drug has shown an effect not less remarkable, the symptoms yielding with marvellous rapidity. Visceral syphilis is also favorably reported on, and in connection with the rapidity with which specific adenopathy regresses, it may be interesting to cite a case of Spiethoff's with enlarged glands in the inguinal region and back of the ear of two months' duration, in which the usual treatment had been of no avail. An injection of 0.6 gramme was given and was followed one hour after by severe pain back of the ear, nausea, and profuse perspiration. This disappeared at the end of another hour, when diminution of the gland set in, leaving it at the end of six hours only one third its former size. Having similar results he came to the conclusion that local treatment might be indicated, and so treated subsequent cases by injecting into the glands directly 0.01 gramme.

Exceptions. Although such brilliant results have been obtained now in thousands of cases, there are a minority in which for some reason not clear at present the remedy has failed to influence the active manifestations of the disease or the Wassermann reaction. As examples may be mentioned two cases of roseola treated by Hügel and Ruete with 0.4 and 0.5 gramme respectively without effect, also one of specific angina with papular eruption. Similarly I have observed a case of recent syphilitic infection in which the skin and mucous membrane lesions were uninfluenced by 0.4 gramme of the drug. Eitner found a lichenoid papular eruption little changed after six weeks. In a case of Iversen's moist papules about the anus persisted after four weeks and necessitated a second injection. There are a number of instances in which treatment in the primary stage failed to abort or prevent the roseola, which appeared from a few days to a week or more after. In a number of the late secondaries it has been necessary to repeat the dose before any change could be observed.

Visceral lues. From the literature on this subject, arsenobenzol is no less beneficial in specific visceral disease than in the cutaneous and mucous membrane manifestations. Schreiber reports favorably a case of hæmorrhagic nephritis; Michaelis found chronic amyloid and acute specific nephritis improved and in a case of fatal filariasis with marked nephritis saw the renal symptoms rapidly disappear. There is abundant evidence in favor of treating specific nephritis with the drug, to which testimony I can add two of my cases with albuminuria, the urine being free from albumin in five and seven days respectively.

Hoppe makes note of a severe case of syphilitic icterus which completely cleared up in nine days. Syphilitic orchitis is also favorably influenced, in one case the symptoms disappearing in sixteen days.

Pulmonary lues is said to improve under this treatment, and in phthisical patients with specific infection, rather surprising results were obtained in that the patients' general nutrition improved and a noticeable gain in weight took place. The tuberculous apparently tolerate this drug better than they do mercury and it should therefore be the remedy of choice in these cases. Duhot, however, advises prudence in the administration of the drug to these patients, on account of its vasodilator action, which might give rise to hæmoptysis. He suggests small doses and, if they are well borne, repetition.

Nervous system and eye. It cannot be too strongly emphasized that the greatest judgment and care should be exercised in treating patients with affections of the nervous system or eye. At the very outset Ehrlich cautioned against the use of the drug in cases with advanced degenerative changes, and in a recent personal communication to Dr. Bernard Sachs he again warned against administering the drug in advanced cerebral or spinal disease, saying that twelve deaths had already occurred. Theoretically, the remedy does not find its indications in parasyphilis, and clinical experience is quite uniform in agreement that in cases of advanced tabes and paresis it does no good and may be productive of harm. In the early stages of these affections something may perhaps be accomplished in arresting their progress. Quoting a few of the results and opinions of some of the continental physicians, paralysis and pain in cerebral syphilis, according to Neisser, disappear as if by magic. In tabes and paralysis with early symptoms he would advise treatment, but questions whether it should be given in optic atrophy. In several cases of parenchymatous keratitis he obtained no result.

Michaelis treated fifteen cases of tabes, eight of paralysis, and four cases of cerebral syphilis; of the latter three cleared up, the fourth had not been observed long enough. In general he found in tabetics a remarkable improvement in the ataxia, and in a case of progressive paralysis a remission which had continued for two months. He believes, however, that not much can be hoped for from the treatment of advanced cases of parasyphilis.

In a case of luetic apoplexy with eyelid and muscle paresis, double vision and weakness of the left leg, Treupel reports that after 0.3 gramme only slight weakness of the left eyelid and external muscles was left, this remaining stationary. In incipient paralysis marked improvement in the psychic manifestations followed an injection of 0.32 gramme.

Twelve paralytics treated by Meyer showed no lasting improvement; in four the Wassermann reaction remained uninfluenced; in four its intensity grew less; in four it disappeared. In acute mental disease with fresh exanthem and glandular swelling he noted prompt improvement, also in cerebral syphilis and epileptiform seizures.

Glück reports two cases of progressive paralysis and one of optic atrophy with unsuccessful result; in two cases of cerebral hæmorrhage with symptoms of paralysis improvement came in two weeks.

Favento treated eight cases of parasyphilis without much effect; in three tabetics the pains disappeared.

Wechselmann observed improvement in cerebral syphilis with tumor formation, luetic apoplexy, tabes, and early progressive paralysis. Three paralytics treated by Dörr showed an improvement in their symptoms. Sieskind published a case of atypical tabes with symmetrical trophic ulcers of the big toes, in which the ulcers healed quickly, the lancinating pains disappeared, and the ataxic disturbances improved. He did not get good results in hereditary parenchymatous keratitis, but in optic neuritis he states that prompt regression of the disease took place. Four cases of iritis under his observation also cleared up. Wechselmann reported a favorable termination in a woman who had suffered from optic neuritis, and Neisser mentions a case of cerebral syphilis and optic neuritis one half year after infection, in which all subjective and objective symptoms disappeared promptly under 0.3 gramme and potassium iodide.

Anscherlik reports a case of choroiditis with a positive Wassermann reaction. The vision was not changed but the condition was arrested and the Wassermann reaction became negative five weeks after. In another patient with gumma of the retina between the superior and inferior temporal arteries, the tumor disappeared in ten days. The Wassermann reaction became negative within a month. This patient had previously been treated with atoxyl.

From animal experiments it has been shown that 606 is not injurious to the eyes. Transitory symptoms may, however, arise, to which Spiethoff and Michaelis have called attention. A tabetic, fifty hours after an injection of 0.6 gramme, was seized with sudden blindness lasting several minutes; and in another patient who had received 0.45 gramme sudden ptosis of one lid and blindness lasting ten minutes developed eight weeks after injection. No pathological condition was revealed by ophthalmoscopic examination.

I have treated nine cases of tabes with little success; one case of cerebral syphilis with wonderful result, two cases of optic neuritis, one with doubtful effect, the other with some improvement in his vision. The case of choroiditis is responding favorably, but has not been under observation long enough to judge of the ultimate result. The details of these cases will be found in the histories appended to this article.

Hereditary syphilis. It has been shown that 606 may be given during pregnancy not only without producing abortion but with marked benefit to the child. Although Ehrlich at first advised against treating syphilitic infants on account of the danger of saturating the body with endotoxines, it has been found that these children bear the treatment very well. The first patients treated by Wechselmann were heredosyphilitics, several of whom died, but none showed at autopsy any evidence of arsenical intoxication. In a number of cases of syphilitic pemphigus neonatorum he reported most favorable results. Michaelis treated a five weeks' old child with a maculopapular eruption over the body and infiltration and scaling of the hands and feet with enlarged spleen and positive Wassermann reaction with 0.06 gramme. In a week all the symptoms had disappeared excepting the snuffles. The child died, however, several weeks later.

Favento treated a series of cases with syphilitic pemphigus, bone disease, and Parrott's pseudoparalysis. The lesions yielded with surprising rapidity. In a case of pemphigus in three days the spirochætæ had disappeared from the bullæ and in five days the latter had healed.

Remarkable results are also seen in heredosyphilitic children nursed by mothers just treated. Taege reports the case of an actively syphilitic primigravida who gave birth to a child in which nine days later pemphigus lesions on the soles and paronychia of the hands developed. The mother was injected on the following day with 0.3 gramme. Five days after the lesions in the child had disappeared and its general nutrition improved. No arsenic was found in the mother's milk, and the phenomenon is explained on the ground that the antitoxines of the mother reached the child through the milk and brought about the cure in this way.

Action on spirochætæ. Hata demonstrated that in syphilitic rabbits treated intravenously the spirochætæ had almost entirely disappeared from the lesions the next day. In human lues, when the symptoms are influenced the organisms likewise disappear in from twenty-four to forty-eight hours, and if they are still present at the end of this time it is believed by Ehrlich that the dose was too small. On the second day they swell, show degenerative changes and decreased motility.

Influence on the Wassermann reaction. There exists in the literature such a discrepancy on the results obtained in the serum reaction that no satisfactory deductions can be made. Many cases have remained strongly positive for weeks even when the clinical effect is obtained. From the work of Schwartz and Fleming and others arsenobenzol does not affect the chemistry of the reaction, but is indifferent, neither hastening nor retarding hæmolysis. Hügel ventures the opinion that a negative reaction becomes positive quicker than after mercurial treatment. Wechselmann reports a negative result in the majority of his cases in from one to seven weeks, mostly however, after four weeks. Schreiber and Hoppe found eighty-four per cent. of their cases negative after fifty days; this was increased to 92.3 per cent. after longer observation. One case became negative as early as forty hours, another four days, and still another after six; the majority, however, after fourteen days. In one case seventy days elapsed before a change took place.

In Isaac's twenty-seven cases, although there was regression of symptoms, all remained positive except two, one of which became negative after six weeks. Neisser's results were forty-four per cent. negative with the Wassermann method and 19.2 per cent. with Stern's modification, the average time being between twenty and thirty days. Jéronne gives sixty per cent. negative; Treupel's cases became negative in from seven to sixty days. Glück reports one third of his cases negative after from thirty-five to forty days; Iversen in from twenty to forty days, two as early as the eighth and tenth day; Michaelis from two to ten weeks. Herxheimer's results were as follows: Twenty-one chancres; three postive before treatment; of these two became negative after seven and twenty days respectively. Four negative before treatment became positive four, six, nine, and twenty-eight days after injection. Secondary lues; thirty became negative after treatment, five in from one to two weeks; of these four became positive after from one to one and one half weeks. Sixteen remained positive; four which had been negative before treatment became positive after; nineteen negative before treatment remained so; of seven latent cases with positive reaction, three became negative in from eight to fourteen days.

In the fourteen cases treated by Nichols and myself at the City Hospital the reaction was positive in thirteen before treatment (0.3 gramme). Of eleven that could be followed three were still positive after seven, twenty-nine, and thirty-five days;

eight became negative in a period varying between nineteen days and three months. Of these eight three cases have recently been examined, two with recurrences have a positive reaction and one has remained negative.

Of the new series of cases treated since August 31st, four have become negative, one after six, another after twelve, the third after twenty-six, and the fourth after twenty-seven days.

Elimination and metabolism. The greater portion of the drug is eliminated through the urine and a small amount through the fæces. Fischer and Hoppe found that if given intravenously its excretion was almost complete in two or three days; subcutaneously in about five days in doses of 0.3 gramme, in the vigorous; in paralytics, in from twelve to fourteen days. From the fæces it was still recoverable on the tenth day when given by the intramuscular method and on the fifth and sixth day if administered intravenously. According to Treupel it can be detected in the urine on the twelfth and thirteenth day in all patients. Greven's work shows that it appears in the urine as early as from twenty-five to thirty minutes after injection, that elimination by the subcutaneous method is more rapid than by the intramuscular, requiring fourteen days in the former and seventeen or eighteen days in the latter. He also found that elimination is retarded somewhat when there is simultaneous mercurial treatment and that it is retarded when potassium iodide is given.

The remedy is reported as having a favorable influence on lecithin metabolism. It exerts a most profound effect on the bodily nutrition of many patients, a rapid increase in weight and feeling of well being following within a surprisingly short time of its administration.

Recurrences. With the very small doses, 0.3 and 0.4 gramme, which were largely employed in the beginning it is not surprising that a number of relapses have occurred; it is rather to be wondered at that not more have been reported. During a period of observation extending over three and one half months Herxheimer had only one recurrence in over 200 cases treated; this was a case of ulcerative lesions of the scalp which recurred after thirty-nine days. Favento had three relapses out of 156 cases treated; one gumma and two cases of secondaries with initial lesion. In Hügel's series of thirty cases there were four relapses; one roseola, one gumma after two weeks, one angina, and one serpigenous syphilide at the end of two weeks. In over 300 cases treated by Schreiber ten patients showed manifestations in four weeks. Sieskind treated 232 men; of thirty-five who returned seven had recurrences; of 134 women nine returned, of whom one had a recurrence.

Of the first series of sixteen cases treated by Dr. Nichols and myself there are two recurrences; in the series incorporated in this report there is one relapse.

Repetition of dose. It is now thoroughly established that the dose may be repeated not only with safety but with the greatest benefit to the patient. The average time at which this is done is given by the majority of observers as from three to four weeks, although it has been repeated as early as ten days by Schreiber. He advises the administration of a second dose in those cases where the manifestations do not disappear rapidly or the Wassermann reaction is still positive at the end of four weeks. Sieskind has injected one of his patients three times. Up to the present time I have repeated the dose in only two of my cases, one with specific endarteritis of the base, the other with optic neuritis, with what beneficial result will be seen in the histories of the cases. The patient with recurring condylomata was given a second injection at the City Hospital of 0.6 gramme without much influence. The two other cases with relapses will receive a second injection as soon as practicable.

Curative action. The observation period of the clinical use of 606 is still too short to make any definite statement on the curative properties of the drug. Only after a period of months and perhaps years will we be in a position to say whether one or two doses are curative or only ameliorative. This is borne out by the number of relapses which have occurred and which we may be able to prevent in future with more exact data as to dosage. Experimentally a single dose will cure syphilis in animals, but we must remember that in the human subject there are other factors to consider which may complicate the action of the drug, such as alcoholism or other pathological condition. After general infection takes place the spirochætæ are harbored by the various organs and tissues and by the time the drug reaches them it may be too attenuated to have much effect or on account of an obliterating endarteritis may not reach them at all, in which case a focus would be left to produce a relapse.

Contraindications. On the side of safety the remedy is contraindicated in organic heart and vascular disease, nonluetic retinal and optic affections, pulmonary disease excepting tuberculosis, nonluetic nephritis, constitutional disease, and fevers. It is also contraindicated in advanced diseases of the brain and cord.

Fatalities. It is difficult to say how many if any of the deaths in patients who were treated with 606 are referable to the remedy. There does not appear to be recorded a single instance where an unfortunate result occurred in patients suffering from uncomplicated lues. The majority of cases which terminated fatally were those with advanced degenerative changes in the nervous system, complicated with organic disease, extreme cachexia, anæmia, alcoholism, or other pathological condition. Many of these came to autopsy but no evidence of arsenical intoxication was disclosed. A number of fatalities also occurred in cachectic and practically moribund heredosyphilitic infants. In several cases in which the intravenous method was employed sepsis intervened and terminated fatally. Spiethoff treated an undernourished anæmic woman with tertiary pharyngeal symptoms who three years before had been treated with atoxyl. She was found dead in bed the next morning. Autopsy revealed besides the tertiary lesions of the throat, gummata of the liver and hypoplasia of the heart and aorta; no evidence of arsenic intoxication. It is scarcely fair to enumerate among the casualties patients with other affections in whom the drug was given as a *dernier ressort*, such as advanced cases of lymphosarcoma, filariasis, pernicious anæmia, etc.

Influence on other cutaneous diseases. The drug has been given tentatively in a number of cases of psoriasis, in some with good, in others with no effect. In a case of lichen simplex of Vidal and one of lichen planus prompt disappearance of the eruption is reported. Schwabe publishes another case of lichen planus, in which the lesions disappeared with amazing rapidity, only to recur as an acute outbreak ten days later. Verrucæ planæ juveniles on the backs of the hands and on the face of a luetic patient are said to have showed a regression on the day following the injection and to have entirely disappeared at the end of the nineteenth day.

(*To be concluded.*)

VITAL STATISTICS IN THE PROMOTION OF PUBLIC HEALTH.*

By W. H. Guilfoy, M. D.,
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Newsholme has defined vital statistics as the science of numbers applied to the life history of communities and nations; Wilbur calls it the Cinderella of modern public hygiene, sitting in the chimney corner sifting the ashes of dusty figures while the proud sisters, bacteriology and preventive medicine, go to the ball and talk about the wonderful things that they have done. It might also be defined as the numerical registration and tabulation of population, marriages, births, diseases, and deaths, coupled with analyses of the resulting numerical phenomena with the end in view of "searchlighting" the path of sanitary progress.

The basis of all vital statistics is the population as furnished by the census, with its various subdivisions as to locality, age, sex, race, civil condition, density, occupation, etc.; during the intercensal years estimates must be made of the population based upon an arithmetical or geometrical progression; upon this base must take place the building up of a superstructure, a store house, containing the essential requisites of all knowledge on health, fecundity, prosperity, disease, and death. This thought prompts the query: "If a life insurance company can erect in the city of New York a palatial and phenomenal skyscraper, paid for by its knowledge of mortality rates transmitted into dollars and cents, why should not the Federal government be able to erect at its seat a monumental temple of vital statistical lore, surpassingly beautiful and practical, and paid for by the increased economic value of the health of the nation?"

Marriage statistics form an interesting part of the subject by reason of their bearing upon the increase of the population and their use as an index of worldly prosperity. The full registration of births occurring in a community is of great value from the viewpoint of the vital statistician, and yet it must be admitted that very few of the cities, not to speak of the States in the United States, are in receipt of ninety per cent. of reports of births occurring within their limits; in Great Britain and Europe the ordinary measure of the mortality among infants under one year of age is the number dying per 1,000 births reported during the year; in the United States at the present time such a standard could not be set up in any one State, and in very few cities; the birth rate of a community has a far reaching influence upon the increase of population, age, and sex constitution thereof, and questions of social interest as fecundity of native "stock," illegitimacy, and divorce.

The most important subject with which this paper deals is the consideration of the question of mortality and mortality rates. The country that first entered the field of mortality statistics was Sweden, in the year 1749, and probably the first tabulation of deaths must have been brought about by the occurrence shortly before this date of a death dealing epidemic of such magnitude that it aroused a desire to know how many died, this desire resolving into a demand, with the result that for 150 years death rates at various age groups are in existence; it is not surprising that the lowest rate of mortality in Europe is to be found in the Scandinavian peninsula; in other words, where the lamp of vital statistics was first kindled there is to be found a progressively healthy and vitally vigorous nation; if the pathway be made light then shall the feet of the hygienist not go astray in the teaching of man to lead a happier, healthier, and longer life.

The chief and noblest aim of the vital statistician is to point out how, when, and where the best efforts of the health officer and hygienist may be directed to conserve health; his analysis of returns will show what forces have been at work in the past tending toward the suppression of all the various forms of destructive disease, at what psychological moment these forces should be put into operation, and in what spot action should be begun; deaths and causes of deaths are facts which may be classified, tabulated, and analyzed, and his presentation of the various factors influencing health and life creates laws which may not be disobeyed save under penalty of painful disease and perhaps death; "diseases are the iron index of misery," and the complete registration of *all* diseases with attendant conditions of congestive contact, social excesses, vicious indulgences, and hygienic ignorance shall form in the future the basis of official and philanthropic intervention.

Improved vital statistics is the demand of the hour, and in so far as further progress is made in this direction, then so far will corresponding advance be made in preventive medicine; the day of comparing the salubrity of a town, city, state, or nation with that of another by the use of the crude death rate is passed; the constant repetition of the warnings given in the past, that the crude death rate should not be used in this manner, is bearing fruit; it may and is used constantly and properly in the comparison of the mortality of a locality with that of its past, provided no great change has occurred in the sex and age constitution of the population; the last two mentioned factors are the most important in the determination of the death rate of a locality. It has been repeatedly shown that given two cities with varying age groupings of the populations, but with exactly the same *death rates* at these age groups, that one city will possess a much lower general death rate than the other, due not to healthier environment but to the more favorable distribution of ages of the inhabitants; sex distribution modifies the death rate, the presence of a larger proportion of females than males in a population always tending to lower the rate. While on this subject, I would earnestly recommend that the Bureau of the Census establish a standard table showing the death rates by sex and by age groups, the application of which to the returns of cities and States would serve to do away with, in great measure, the disturbing influence of these two factors. Some of our sister cities—I mean brother cities, for at present they are ruled or misruled by the male sex—display in bold faced type upon the front page of their weekly or monthly reports—as if inviting attention to the extreme healthfulness of the locality—*a general death rate of 10 per 1,000*—"which means that either every child born attains the age of one hundred years, or else that the average age at death is one hundred, or if some die in infancy, others must have lived much more than one hundred."

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*Read at the meeting of the American Public Health Association, held in Milwaukee, September, 1910.

Other factors influencing the death rate are as follows: Density of the population; this factor, which formerly was considered as most directly concerned with increased mortality, and for the correction of its influence upon the death rate mathematical formulas were worked out, is now viewed as of secondary importance compared with the immediate hygienic surroundings, the habits and intelligence of the dwellers; the infant mortality is a good index of these latter influences, and in the city of New York, where the number of persons in one block reaches the astounding mark of 2,471 to each acre, the number of children dying out of every 1,000 births was one half the number dying in blocks with a density less than one half; it must be admitted, though, that all blocks with a density of 1,000 to the acre showed an increase in the infant mortality compared with that of the entire city. A second factor is the nativity of parents; the infant mortality in a block inhabited by Russian Poles was 166; by Italians 165, by Irish and Germans mixed 204, by wealthy native white 50, by middle class native white 121, by native colored 319. The influence of the presence of the colored population upon the death rate is well known, and the experience of southern cities is amply corroborated by that of areas in northern cities occupied by blacks; the highest infant mortality is always to be found in San Juan Hill, a typical colored section.

Hoffmann, in his paper on the General Death Rate of Large American Cities, enumerates the following general factors as affecting the rate: Size of city, density of population, latitude, longitude, elevation, rate of annual increase, proportion of males, foreign born, of foreign parentage, of colored, of illiterates, of male wage earners, of ages, the mean annual maximum and minimum temperatures, and mean annual relative humidity; so that the general death rate is when analyzed found to be based upon a very complex set of props, and the influence of the most important must be measured before acceptance of it as an index of mortality.

The vital statistician must prepare his tables of mortality in such a way as to show the *causes* of death not only by weekly, monthly, and yearly occurrence, but he must, for purpose of comparison, furnish quinquennial or decennial figures corrected to correspond with fluctuations of the population; tables showing the number of deaths and rates at divisional ages, especially among infants and children under five years and between five and nineteen years, should be compiled. Of surpassing importance is the registration of deaths by house and street, with cause and age specified in order that the epidemics may be traced, studied, and prevented; tables of deaths from the principal causes should be prepared and arranged according to race, nativity of deceased and parents of deceased; deaths from accidental causes should be presented in detail; deaths in institutions should be charged up against the locality where the deceased resided before admission; areas of sanitary interest should be mapped out and mortality and morbidity rates published; mortality rates—arranged according to specific occupation and by age divisions—are much sought for at present, and will continue so by reason of the awakened public interest therein; suicide tables should be printed according to the method used, nationality and age tabulated, but not excluded from the regular mortality tables published.

Before closing I would like to call attention to the results obtained in the city of New York (since the organization of the Board of Health more than forty years ago), the rates and causes of death of the first decennium being compared with those of the decennium just ended. The crude rate has decreased from 26.61 to 16.21, almost forty per cent.; the decrease percentage at age groups representing infancy, childhood, youth, maturity, decline, and old age was as follows: Infancy, 45; childhood, 42; youth, 32; maturity, 25; decline, 3; old age, 6. The death rate among females as compared with males is lower in each decennium and at each age group: the percentage reduction in the rate among the females has equaled or surpassed that among the males at every age group in the comparison, under the age of fifteen and above forty-five years the degree of reduction is almost the same, while between twenty-five and forty-five years of age the reduction is much greater among the females; by far the greatest saving in human life has taken place before the age of forty-five, and above this latter the saving is comparatively very small; those causes which the Department of Health has sought to eradicate have reflected their disappearance or abeyance in the absent or diminished mortality of smallpox, typhus fever, Asiatic cholera, typhoid fever, diphtheria and croup, measles, scarlet fever, whooping cough, tuberculosis, and diarrhœal diseases, causes which affect mankind before and during maturity; while on the other hand those in the control of which no official interference has been attempted have increased tremendously, especially cancerous, circulatory, and urinary diseases; to a lesser extent the mortality from acute respiratory diseases has increased; judging from calculations made two years ago the decreased mortality from tuberculosis at the ages over forty-five years has had the effect of turning what would have been an increase from all causes to a very slight reduction at the decline period of life.

It is also evident that the entrance of the female into the business world has not been followed by an increased mortality at any age group, as compared with the male, and if we consider the ages from twenty-five to forty-five years as the most productive in a social and economic sense, we find that it is at these ages that the decrease in the mortality of the female as compared with the male is greatest; the work assumed by the female has not added to her mortality, it has brought greater physical comforts and increased her span of life.

The rungs at the bottom of the ladder of life are being carefully looked after; those at the middle of the ladder have been neglected; the physical welfare of the man has been lost sight of in the multitude of attempts at prolongation and betterment of the physical properties of the child; words of praise should be bestowed upon these official and philanthropic efforts to make the coming generation "fit"; but is it not time that the vital statisticians should by investigations show us that the mortality from the diseases affecting middle age is increasing, in order that man may be educated into following the ordinary rules of morality, sobriety, and moderation in all things, even in work? The diseases of the kidney, heart, arteries, brain, and digestive organs are growing apace. Light, more light, is necessary, otherwise "the millennium when," as Isaiah says, "the child shall die a hundred years old" shall never materialize.

TUBERCULOSIS OF BONES AND JOINTS.*

By Edward M. Brown, M. D.,
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It is the general belief among physicians and surgeons that if the cause of cancer were known the treatment of that disease would be revolutionized and its ravages easily within our control. It was so believed of tuberculosis on the discovery of the bacillus by Koch, in 1882, but the lapse of time has not proved it so. Although we have known the cause of tuberculosis for twenty-five years or more, the treatment of this disease, especially in the bones and joints, has not advanced so satisfactorily as might have been expected. The improvement in treatment along surgical lines has not been as great as we would wish.

It has been shown by Ely (*Surgery, Gynæcology, and Obstetrics*, l, p. 561), who has done and is doing excellent work in this line, that our weak point has been ignorance of the fundamental facts that would enable us to reach logical conclusions, and that we have tried to substitute clinical experience for exact knowledge. His statement that we have neglected the study of the pathology of bone and joint tuberculosis is, I fear, only too true.

The profession to-day is not agreed upon any one line of treatment. Various methods have been advanced and supported by statistics, but it is generally agreed that the method employed must depend upon the nature and stage of the lesion, the age and social position of the patient, facilities for treatment, the individual experience of the surgeon, or that results must be accomplished by a combination of all available methods. (Whitacre: *Journal of the American Medical Association*, lii, p. 1378.)

An immense amount of good new work has been done in the operative line which has proved of definite value. A great deal is being done in the experimental line which has not yet had sufficient trial to reach reliable conclusions. It is my desire to bring before the members of this society, for the purpose of discussion and mutual benefit, as briefly as possible the modern methods of treating tuberculous disease of the bones and joints in a general way, the time allotted being too short to discuss the treatment of special joints.

The treatment of tuberculous joint disease is *First:* General or constitutional. *Second:* Specific or serum treatment. *Third:* Local.

For practical purposes the local treatment may be divided into: 1. Injection treatment; 2, mechanical; 3, operative.

THE GENERAL OR CONSTITUTIONAL TREATMENT.

The importance of increasing the resistance of the patient to this disease in any form is now more fully recognized than ever before. The power of resistance is a large factor in determining the result as regards the function of the limb or the life of the patient. Under the best modern treatment death seldom results, but in a person of little resistance or in the acute virulent type of the disease the end frequently is fatal.

Fresh air. Out of door life is of the utmost importance. It is to be regretted that all hospitals or wards for the treatment of tuberculous bone and joint disease are not located in the country rather than in the large cities. In the Convalescent Home of the Children's Hospital fifteen miles from Boston the children have lived and slept in open sheds winter and summer since 1903. The sheds are heated at 40° F., and the children are warmly clad, with ears and head protected. The effect has been an increase of appetite, general vigor, and hæmoglobin. The local processes are also favorably influenced. (*Communication of the Massachusetts Medical Society*, xix, p. 303. Dr. Burrell.)

Alexander Primrose (*American Practice of Surgery*, iii, p. 585) states that the great advantage of this treatment is annually demonstrated in Toronto, where the Hospital for Sick Children transfers all its patients to summer quarters every year. He says: "It is not unusual to watch with anxiety a serious case of tuberculous arthritis toward the end of the winter in the hospital in the city, in the hope of tiding the patient over the necessary time until he is able to be transferred to the Lakeside Home, where one has every confidence that he will be benefited."

Brannan (*Transactions of the International Congress of Tuberculosis*, 1908, ii, 68) reports excellent results of the outdoor treatment at Sea Breeze Hospital, Coney Island. During four years 136 patients were treated; sixty-three were cases of spine and hip disease; fifty-five per cent. were either completely cured or much improved when dismissed. Of twenty-two patients with advanced disease of knee or other joints, seventy-three per cent. were cured; twenty-three per cent. much improved.

E. H. Bradford (*Ibidem*, p. 204) relates most satisfactory results of open air treatment at Wellesley Convalescent Home of the Boston Children's Hospital, and observes that those suffering from the acuter forms were less benefited than those in a more chronic condition. He further observes that it is not manifest that sea air has any special advantage.

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*Read at the meeting of the Mississippi Valley Medical Association, held in Detroit, September 14, 1910.

DeForest Willard (*Ibidem*, p. 257), Willy Meyer (*Ibidem*, p. 212), L. W. Ely (*Boston Medical and Surgical Journal*, December 6, 1907), H. A. Wilson (cited by DaCosta, *Keen's Surgery*, i, p. 635), Sinding-Larsen, of the Seashore Sanatorium at Fredericksvain, Stockholm (*Journal of the American Medical Association*, xlvi, p. 634), and others in this country and abroad are unanimous in emphasizing the value of the outdoor treatment as one of first importance in the treatment of tuberculosis of the bones and joints. It is to be hoped that the present antituberculosis wave will accomplish something toward establishing suitable outdoor wards or colonies for the treatment of this form of the disease. In the meantime we must do the best we can with the conditions at hand. Keep the rooms of such patients open as much as possible. Put the patient on the roof, on the fire escape, on the back porch, or in a tent in the yard. Some place can always be found better than the small, badly ventilated room in which we so often find these patients.

Diet. Next in importance to fresh air is a suitably nourishing diet. If we are to increase the resistance of these patients they must have the best food obtainable and that properly prepared. When this plan is carried out we will find, as in one ill from any cause, that the appetite improved. It is probable that the rapid improvement noted in patients treated in open air hospitals is not only due to the increased oxidation and improved metabolism and increase of appetite as a result, but to the fact that the patients receive the best of food and that more frequently than the usual three times daily.

Brannan (*loc. cit.*) points out that at Sea Breeze the children are fed as often as six times daily. These patients then should not only receive the best of food, properly prepared, but should be urged to eat as frequently as possible. Easily digestible food of high nutritious value must be given patients having fever. By these milk and cream with crackers, butter, and eggs can usually be taken, and to those who can digest it a mixed proteid, fatty carbonaceous diet, with a fair amount of vegetables and fruit, should be given.

Hygiene. Good hygienic conditions in the surroundings of the tuberculous are imperative for good results and the protection of others from the contagion. These patients should be warmly clad for protection from changes of temperature. Wool or flannel should be worn throughout the year.

Although the danger of contagion from the disease in this form is somewhat exaggerated, it is well to see to it that all dressings from open wounds, sinuses, etc., are immediately burned. I have seen a family of four practically "wiped out" in which carelessness in this regard was at least a great factor.

Rest, exercise, and massage. Rest in bed in certain stages of tuberculosis of joints is sometimes imperative, but the evil results therefrom are greatly mitigated if the room is very well ventilated and has plenty of sunshine, or the patient is in the open air. Patients with fever should not exercise and patients without fever should not exercise to the point of fatigue. Short of this, exercise is beneficial (DaCosta in *Keen's Surgery*, I, p. 634). Of course, rest for the affected joint is always imperative and will be spoken of more fully later.

General light massage to the patient who cannot take exercise may be beneficial, but under no condition should an actively tuberculous area receive such treatment. I have seen tuberculous meningitis quickly develop in a child with early hip joint disease while under osteopathic treatment, the child succumbing within two or three weeks. In disease of this nature such manipulation is undoubtedly dangerous.

The danger of contracting bovine tuberculosis through the milk supply is a point on which there is much difference of opinion. There is no doubt but that the number of cases of infection from this source have been exaggerated, but as pointed out by Moss (*Bulletin of the Johns Hopkins Hospital*, February, 1909) the danger of transmission of bovine tuberculosis to man is sufficiently great to warrant strict precaution against it.

Drugs. Drugs at best are of but secondary importance. Tonics are, of course, of some value. Certain drugs seem to have a decided value in tuberculosis. Cod liver oil has long been recognized as being perhaps most useful.

Freeman (*New York Medical Journal*, XC, No. 26, p. 1270) is most enthusiastic in the use of succinimide of mercury hypodermically administered in the treatment of tuberculosis in any form. In his opinion, the only question which appears to remain for test is whether we might not have here a specific remedy for the disease, in all stages at which the tissues are not so broken down and disorganized that reestablishment is a physical impossibility. His method of treatment consists in beginning with 1/10 grain of the succinimide of mercury, injected deeply every other day, gradually increasing the dose until slight tenderness of the gums or diarrhœa is produced, then reducing the dose until these symptoms subside, and continuing for thirty injections. A rest of two weeks is then taken and the treatment continued as before. The indications for reducing the dose are given as (a) mercurialization; (b) sudden rise of temperature; (c) gastric disturbance and diarrhœa; (d) loss of weight or, in lung cases, excessive cough and expectoration, suddenly coming on before the symptoms are within control. Marked improvement has been noted both in lung and bone cases.

Wright, United States Naval Hospital, Las Animas, California (*United States Naval Medical Bulletin*, January, 1909, p. 46) confirms Freeman's views and points out, 1, that mercury acts as a tonic, increasing the vitality of the cellular portion of the tissues, and that it renders the blood bactericidal, producing an antitoxine therein that is directly destructive to the tubercle bacillus; 2, the action is cumulative and lasting; 3, the patient gradually acquires an immunity; 4, the mercury should never be used to the point of salivation.

It is probable that the facts are, as has been suggested by others, that in a certain class of tuberculous cases, notably among those in the army and navy, in which syphilis is quite often a complication, a degree of improvement under such treatment is possible. That it has any marked effect beyond this is extremely doubtful.

SPECIFIC OR SERUM TREATMENT.

The use of tuberculin and specific sera in the treatment of bone and joint disease seems at the present time to be assuming a stage where it promises to be at least a valuable aid when properly administered. Ever since the introduction of Koch's tuberculin, and especially since the publication of Wright's technique, in 1903, the serum treatment has been tried by various investigators with varying results.

The application of the opsonic index theory to the practical treatment of tuberculous disease is affected by determining the opsonic power of the patient's blood and then using tuberculin as a therapeutic means to increase that power and thus enhance the bactericidal quality of the blood.

The vaccine usually employed is the tuberculin T. R. which is made from the finely triturated bodies of tubercle bacilli. Any of the tuberculin vaccines or sera may be used either by following the opsonic index technique of Wright or the practical method of Trudeau.

It was formerly held that the tuberculin treatment was contraindicated in mixed suppurative tuberculous bone and joint disease, but it has been recently shown in splendid work by DeForest Willard and B. A. Thomas (*Annals of Surgery,* li, p. 761) that excellent results may be obtained by alternating autogenous pyogenic bacterin and tuberculin inoculations in the treatment of such cases.

In speaking of the tuberculin treatment, J. B. Murphy says (Discussion: *Annals of Surgery,* lii, p. 137): "Great assistance is rendered by this treatment in cases of bone tuberculosis. There is, however, no more treacherous and dangerous drug than tuberculin if improperly given. As a stimulant and as an aid in surgical tuberculosis, I know of nothing so good when the treatment is carefully administered."

From personal knowledge, I know Dr. A. H. Ferguson has found tuberculin a great aid in surgical tuberculosis, and the autogenous vaccines valuable in mixed cases.

Dr. A. D. Beven (Discussion: *Annals of Surgery,* lii, p. 137) considers it too early at this time to arrive at any definite conclusions in regard to the value of the tuberculin treatment.

Alexander Primrose (*American Practice of Surgery,* iii, p. 598) holds that if we are to accept the theories promulgated by Wright, we have an explanation of the beneficial effects which may follow operation in which the surgeon has only partially succeeded in removing the focus of the disease.

E. H. Ochsner (*Illinois Medical Journal,* xv, pp. 137-141, 1909) is convinced that when properly employed, vaccine therapy in joint tuberculosis has a threefold effect: 1, It reduces the mortality; 2, it hastens convalescence; 3, it improves the ultimate functional result.

W. G. Stern (*Cleveland Medical Journal,* March, 1909), after eighteen months' clinical experience with the use of Koch's tuberculin, observes that this vaccine, although a terrible agent for harm when used indiscriminately in large doses, is a powerful agent for good when used in small doses, either by the opsonic method of Wright or the clinical method of Trudeau. Nothwithstanding the statements of the laboratory men to the contrary, no harm can come and a great deal of good can follow the proper use of tuberculin without the control of the opsonic index.

H. A. Wilson (*American Medicine,* Philadelphia) thinks tuberculin worthy of trial in bone disease, but only in the hands of those competent by training to use it. He thinks it has not had sufficient practical trial to express an opinion as to its value.

Professor Sonnenberg, of Berlin (*British Medical Journal,* 1900, ii. 952), has made a study of the tuberculin and serum (Marmorek's) treatment and finds that since he began its use he operates less. He thinks much experience and great care in the administration of this treatment is necessary for the best results. Alexander Marmorek, of Paris (*Bulletin d'Institute Pasteur*), a few years ago produced an actively leucotoxic serum for which much advantage over the old tuberculin was claimed. This serum is used both subcutaneously or by rectum.

Homeir (*Münchener medizinische Wochenschrift,* lv, p. 791, 1908), Hoffa (*Wiener klinische Wochenschrift,* xxi, p. 1317, 1908), Sikimeier (*Nederlandische Tijdschrift vor Geneskunde,* ii, No. 18, 1908), M. Strauss (*Münchener medizinische Wochenschrift,* lv, p. 2169, 1908), and others report favorably on its value as a curative agent in bone and joint disease.

F. Gangholf (*Wiener klinische Wochenschrift,* xxii, p. 79, 1909) and Gruner (*Ibidem,* xxi, p. 1317, 1908) report disappointing results from its use. The latter, after treating eleven cases of tuberculosis of bones and joints in children, concludes: 1. Marmorek's serum effects neither in tuberculosis of the lungs nor of the bones a definite cure. 2. It does not prevent the spreading of the disease to hitherto sound limbs or joints. 3. It does not have even a favorable influence upon the general condition of the patient.

There is no doubt at the present time but that tuberculin properly administered is of definite value in the treatment of tuberculosis of bones and joints. While it is not absolutely necessary to closely follow the opsonic index as pointed out by Wright, the opsonic index should be watched at intervals during the treatment. A very small dose (0.001 mg.) should be given at first, its reaction carefully observed, and a proper spacing of the doses determined for safety to the patient, not to speak of good results. Patients with high temperature should not be given tuberculin until the temperature is within control.

As the temperature is often caused by mixed infection, the method advocated by De Forest Willard and Thomas (*loc. cit.*) of alternate administration of autogenous bacterins and tuberculin should be carried out. It is worse than useless to employ this method of treatment in chronic advanced tuberculous disease of various organs with beginning amyloid disease.

INJECTION TREATMENT.

Iodoform emulsion has been more extensively and universally used than any other preparation for this method of treatment. It is still being used by many and abandoned as useless or even dangerous by others.

The method of preparing it recommended by Cheyne is as follows: The iodoform used for the emulsion should be allowed to stand submerged in a five per cent. solution of carbolic acid for forty-eight hours, the bottle being frequently shaken to insure the free access of the acid to the powder.

Instead of using the glycerin alone, it is well to add 1/2,000 part of bichloride of mercury to it. The iodoform is strained from the carbolic acid and is mixed with the glycerin in the proportion of ten per cent.

The method of injecting consists in taking a syringe of suitable size, such as the Ferguson all metal emulsion syringe, plunging the needle into the joint or diseased bone and injecting the emulsion.

We have had such excellent results following the use of iodoform emulsion in the clinic of Dr. Ferguson that we are thoroughly satisfied that the treatment has great value, especially in the early stage of the disease. Even in advanced cases we have frequently been surprised with remarkable results. Ferguson injects from one to four drachms in children, and in adults frequently much larger doses, these being repeated every two or three weeks. The emulsion is injected into the joint cavity, the articular border of the synovial attachment, or into the epiphysis, wherever the primary focus is located. The needle is plunged into all parts of the diseased bony focus which is thoroughly impregnated with the emulsion. It has been pointed out by Ferguson and others that the scaly iodoform rather than the finely powdered drug should be used, as it is slower to be dissolved and absorbed by the tissues, hence has a more prolonged action on the bacillus and is much less liable to produce iodoform poisoning.

Sometimes marked mental and urinary symptoms occur following the use of the emulsion, but I have never seen any serious results.

Calot (*Traitement par des injections*) uses olive oil, 50 parts; ether, 50 parts; creosote, 2 parts; iodoform, 5 parts, for the early stages of synovial tuberculosis with good results. Abry (*Etude sur l'élimination d' iodide par les urines*) reports an interesting study of the elimination of iodine by the urine after the use of Calot's mixture, and concludes: 1. That iodoform injected into tuberculous cavities is absorbed by the organism and eliminated by the kidneys and salivary glands. 2. The iodated products derived from the iodoform are eliminated under two forms: (a) Mineral compounds and (b) organic compounds. Mineral compounds only are found in the saliva, and it is probable that more are eliminated in the fæces. 3. At the time of intoxication organic iodine only is found in the urine. 4. The time of elimination is extremely variable. If the time of elimination is long and not very intense, the prognosis of the result is favorable; if the elimination is short and profuse in quantity, the result of treatment is expected to be less favorable.

Calot uses his iodoformized oil mixture in doses of from two to twelve grammes, according to age, and repeats at intervals of from five to six days.

Sir William Macewen (*British Medical Journal*, ii, p. 949, 1909) uses the iodoform emulsion injected into the tuberculous joint in bones and joint cavities after aspiration, and applies iodoform and boric acid, one to four, in bone cavities, after the removal of the local lesion. He urges the crystallized iodoform as being less readily absorbed and less poisonous.

Primrose, of Toronto (*American Practice of Surgery*, iii, p. 590), after a fair trial of iodoform emulsion, has discontinued its use as being of doubtful value.

Lannelongue (Paris: *Bulletin de l'Academie de médecine*, lxxi, p. 571), as an adjunct to his method of treatment, uses intraarticular and extraarticular injection of iodoform, 10 parts; olive oil, 90 parts; ether, 40 parts; creosote, 2 parts; and urges that it be used early and continuously until the disease is overcome.

Waldenstrom, of Stockholm, (*Zeitschrift für orthopädische Chirurgie*, xxii, p. 581, 1908) pours ten per cent. iodoform in glycerin into bony cavities after operation.

Onorato, of Geneva, (*Zentralblatt für Chirurgie*, p. 1096, 1909), Tsaza, of Rome, (*Ibidem*), Tietze, of Breslau, (*Medizinische Klinik*, iv, p. 391, 1908), advocate the use of glycerin iodoform treatment in the early stages of the disease.

Rovsing (*Annals of Surgery*, Philadelphia, l, 1052) advocates for arthritis tuberculosa sicca the injection of sterile petrolatum into joint cavities and reports good results. The capsule should not be distended to the point of tension, which causes great pain and some rise of temperature, relieved only on withdrawal of a portion of the vaselin.

The Mosetig-Moorhof iodoform plug has been much used by these authors in bone cavities following removal of the tuberculous foci. It is stated that this plug, which is composed of iodoform, 60 parts; spermaceti, 40 parts; and sesame oil, 4 parts; heated to 100° C. and allowed to cool, is less dangerous from a toxic standpoint and more efficient in stimulating healthy granulations than other similar preparations. When heated to 50° C. it can be poured into the cavity and the wound closed. It has been known to remain for several months, during which time the bone gradually closed in as the plug became absorbed. (Meurers: *Beiträge zur klinischen Chirurgie*, lvi, p. 215.) It is imperative that the cavity be made as sterile and dry as possible before the mixture is poured in. Moorhof used the electric hot air blast for this purpose. Others (Moore, *Journal of the American Medical Association*, xliv, p. 1582) use carbolic acid and alcohol.

Nove-Jasseraud (*Transactions of the International Congress on Tuberculosis*, 1908, ii, p. 40), Waldenstrom (*loc. cit.*), Lexer (*Archiv für klinische Chirurgie*, lxxxvi, p. 939), MacEwan (*loc. cit.*), and many other surgeons in this country and abroad report favorably on its use.

For a time there was a tendency to substitute Beck's bismuth paste for the iodoform plug, but the bismuth paste is not so free from harm in closed cavities, although it has proved most efficient in the treatment of tuberculous sinuses. In suitable cases Beck (*Illinois Medical Journal*, April and July, 1908; *Transactions of the International Congress on Tuberculosis*, 1908; *Journal of the American Medical Association*, January 2, 1909) advocates the use of the bismuth paste in tuberculous bone disease and other sinuses. It has been used extensively within the last few years with gratifying results in most instances. A few cases of bismuth poisoning have been reported by Beck himself and others (David Kaufman, *Illinois Medical Journal*, October, 1909). The preparation consists of bismuth, 30 to 33 per cent., in petrolatum or a combination of petrolatum, white wax, and paraffin in varying quantities, according to the consistency required for the tissues injected.

Ridlon and Blanchard (*American Journal of Orthopædic Surgery*, August, 1909), in one hundred cases of sinuses, tuberculous mostly, report favorable results in same with white wax and petrolatum, 1 to 8, without bismuth. In badly infected cases they add 0.5 per cent. of iodine.

J. B. Murphy's (cited by Moore; *Journal of the American Medical Association*, 1903) glycerogelatin formalin bone plug is an excellent preparation, possessing many advantages over the other pastes or bone plugs mentioned. It is made by boiling 100 c.c. of white gelatin in 150 c.c. of glycerin and 500 c.c. of water. One to two per cent. of commercial formalin is then added. It can be poured into the bone cavity in liquid form and quickly solidifies; or it may be inserted as a semisolid mass. Its advantages are, as pointed out by Dr. Murphy: 1. It is powerfully antiseptic; 2, it is absorbable; 3, it is nonnecrotizing; 4, it stimulates tissue granulation.

Murphy (*Practical Medicine Series*, 1909, ii, 139), in infections of the joints, uses two per cent. formalin in glycerin, injected after aspiration of the joint.

CARBOLIC ACID ALCOHOL.

Phelps a few years ago revived the carbolic acid ninety-five per cent. treatment, followed by alcohol douching, with apparently good results in bone and joint tuberculosis. It was quite extensively used for a time and is still being used with good results by many. M. Strauss (*Zentralblatt für Chirurgie*, (1909) and Tubbey, of London (*British Medical Journal*, 1909, ii, p. 1909) advocate its use in certain stages of the disease and report good results. The latter favors Calot's camphor naphthol creosote mixture.

X RAY.

In the superficial bones, such as those of the toes, fingers, and wrist, also the ribs and sternum, the Röntgen rays have proved helpful. L. Freund (*Münchener medizinische Wochenschrift*, lxi, p. 2108, 1909) gives a report of ten cases of tuberculosis of the smaller, superficially located bones, in which six were cured, two improved, and two failures. He thinks it an aid in the treatment of such cases when the synovial is not affected, and there is no pus or bone sequestra present.

Iselin, of Basel (*Deutsche Zeitschrift für Chirurgie*, ciii, p. 483, 1909), treated forty-one cases, in which the smaller bones and bones of the foot, wrist, knee, and elbow were affected. Twenty-four of the forty-one patients were cured, six improved, ten still improving under treatment, and one case was a failure. There were four recurrences after an apparent cure. Iselin has shown by experiments on young animals that the x ray interferes with the growth of bone and warns against its use on the epiphysis of the long bones especially in children.

Weterer (*Handbuch der Röntgen Therapie*, p. 700, 1908) reports similar results.

The Finsen light and heliotherapy also have their advocates and have apparently helped in some cases.

Few, in this country, have had as brilliant success with the use of the x ray as the authors quoted, but it is generally conceded that in properly selected cases of early tuberculosis in adults it is at least an aid in the treatment.

PASSIVE HYPERÆMIA.

Active hyperæmia or hot air treatment of diseased joints has been long recognized as useful, but it was not until Professor Bier, then of Bonn, now of Berlin, introduced the method known as the "Bier Treatmnet" (*Hyperämie als Heilmittel*, second edition, Leipzig, 1905) that passive hyperæmia was recognized as a therapeutic agent in cases of this nature.

The technique of this method consists in placing an elastic woven rubber bandage several times around the limb above the affected joint and allowing it to remain from one to several hours daily. The bandage should cover a considerable area above the joint and should not be tighter than is necessary to produce a vigorous stasis. The stasis should not be marked enough to produce coldness of the limb or pain. Sometimes pain is produced in a diseased limb because of faulty application of the bandage. Sometimes pain is present or increased when the bandage is applied properly. In such cases as the latter the treatment should be discontinued. The joints should not be kept at rest during treatment unless there is pain. This pain often soon disappears after the treatment is continued for a time and the patients can walk moderately with comfort. Thus the maximal functional result is claimed for this treatment.

The improvement under this treatment is accounted for in several ways: 1. There may be an increase of the opsonic index, locally. 2. There may be an increased number of leucocytes in the hyperæmic limb, a local leucocytosis. 3. It may be due to the increased alkalinity of the blood, also local, and a consequent increased bactericidal power.

K. Vogel (*Deutsche Zeitschrift für Chirurgie*, xcvii, Nos. 1 and 2, pp. 1-175), for some time assistant to Professor Bier, reviews his experience with three hundred and forty-nine cases of tuberculosis of the shoulder, elbow, wrist, hip, knee, and ankle, and reports constriction hyperæmia as the easiest method and most effective in its results. Though he followed Bier's method closely, he admits his results were not as good as when he was Bier's assistant. He considers good judgment on the part of the surgeon in each individual case necessary for good results. He used the simple rubber band one hour morning and evening. He points out that we should not be discouraged into abandoning the treatment too early because of slight exacerbations of the disease at the beginning of the treatment.

Abscess or sinus formation is not a contraindication for this method. For such cases Bier uses vacuum cups applied to the sinus openings and incised abscess.

Paul Thiery (*Bulletins et mémoires de la Société de chirurgie de Paris*, N. S. 35, pp. 597-600), Broca (*Ibidem*), and Chaput (*Ibidem*) report indifferent results with the Bier treatment, while Delbet (*Ibidem*), Moty (*Ibidem*), and Arron (*Ibidem*) report gratifying results in certain cases.

American surgeons generally have found the Bier treatment properly applied of definite value. Our results have been satisfactory in the early stages of the disease. The Bier treatment undoubtedly retards the disease and hastens the process of repair.

MECHANICAL TREATMENT.

There is a time in every case of tuberculosis of the bones and joints when physiological rest to the affected limb is absolutely necessary if we hope to overcome the disease. Mechanical treatment aims at securing this rest, thereby lessening trauma and placing the joint in the most favorable position to hasten repair. This is accomplished in one or more of three different ways: 1. By fixation. 2. By relief from weight bearing, as in the hip, knee, ankle, and spine. 3. By traction, to prevent the pressure trauma of reflex muscular spasm.

The textbooks and literature abound in descriptions of novel and complicated efficient and inefficient apparatus, intended to bring about these results. Suffice it to say that the simplest methods should be sought, and they usually will be found efficient when intelligently applied.

Fixation is considered by a great many surgeons, Ely (*New York State Journal of Medicine*, x, p. 275), W. T. Berry (*Journal of the American Medical Association*, l. p. 1677), Wreden (*Zeitschrift für orthopädische Chirurgie*, xxi, p. 473), and Hausner (*Ibidem*, xxv), all agree that fixation is indicated or necessary from a mechanical standpoint in the treatment of bone and joint disease. They assert, and I believe the contention correct, that shortly after perfect immobilization is made, muscular spasm soon relaxes and the pain due to this pull on the diseased articular surfaces soon ceases. For fixation all that is necessary, as a rule, is a simple plaster of Paris bandage.

There is a tendency at the present time to use splints, which, when traction as well as fixation is desired, will permit the patient to walk rather than to lie in bed with weight and pulley apparatus.

E. H. Bradford (*Journal of the American Medical Association*, li, p. 342, 1908) believes that the splint treatment is carried to the point of absurdity and that many patients now allowed to walk about should be in bed. He believes fixation with compression and rest in bed should be insisted upon for the best results. There is some difference of opinion as to the harm done by weight bearing.

V. P. Gibney (*American Journal of Orthopædic Surgery*, xxi, p. 21) shows from his case records the value of weight bearing function when the joint is well immobilized. He thinks immobilization one of the most important factors in the treatment of tuberculous arthritis, but thinks the weight and pulley also has a place.

H. A. Wilson (*Journal of the American Medical Association*, li, p. 342) points out that in order to prevent the weight bearing from producing luxation and consequent shortening, the limb when the plaster is applied should be held in a position of slight flexion, abduction, and external rotation.

With plaster of Paris, the Thomas hip and knee splint, the Bradford and Lovett apparatus, and for the spine Calot's plaster jacket, one has armamentarium sufficient to carry out all that is indicated in the mechanical treatment. It must be remembered that the limb or joint should be placed in an attitude which, if ankylosis takes place, will give the best possible functional result.

As to the selection of splints, it is largely a case of surgical judgment applied to the individual case. Plaster can be made to do in most instances, especially in cases where fixation only is desired.

To my mind, there is no better apparatus for Pott's disease than Calot's plaster of Paris jacket. While extension is made from the chin and occiput sufficient to relieve pain or discomfort at the site of the disease, plaster is closely applied to the body from the chin to the hips. Later this is cut away from the abdomen, and over the diseased portion of the spine, pressure pads being placed in the latter points to lessen or correct deformity.

For the hip the short Lorenz spica, the Bradford and Lovett, chest to toes, long spica (*Keen's Surgery*, ii, p. 331), the Whitman's short stilting brace and plaster spica, or the Thomas hip splint may be used (*American Practice of Surgery*, iii, p. 673). For the knee and ankle a long plaster cast, Thomas knee or Bradford and Lovett knee splint is comfortable, easily applied, and efficient. For the joints of the upper extremities plaster is all that is required. When on removal of the splints or cast the motion of the joint continues to increase from day to day, the disease is considered cured. When, on the contrary, the joint is more restricted in its motion from day to day, we know the disease is still present and we must return to treatment.

When it is seen after a reasonable time that the disease, under the best modern conservative treatment, is progressing, then we should not persist in that method.

OPERATIVE TREATMENT.

The ideal method of treatment for early tuberculous osteitis would be to make a topical diagnosis of the focus in the epiphysis, cut down upon and remove it before the disease has had time to invade the synovial membrane or joint. If the disease was primarily in the synovial membrane, an arthrectomy or resection will do for the joint what removal of the epiphyseal focus does for the bone. Unfortunately it is seldom possible to thus ideally apply our theories to the operative more than any other treatment, because we either: 1. Do not see the cases early enough; 2, apply conservative treatment too long; 3, fail to make a positive topical diagnosis early enough; or, 4, the age of the patient and physiological function of the epiphyseal ends usually first attacked will not permit.

L. W. Ely (*Medical Record*, lxxvi, 551) in a study of joint tuberculosis, with reference to the pathology, secured forty-eight specimens from forty-five patients operated upon by twelve well known and competent operators at various New York hospitals. Of the forty-five cases, thirty-four were tuberculous and eleven were not tuberculous. In ten joints which were not tuberculous nine were sent to the laboratory with the diagnosis of tuberculosis. In four joints sent as not tuberculous, tuberculosis was found. This work of Ely's emphasizes the importance of refinement of diagnostic methods as regards bone and joint tuberculosis.

Before proceeding further, I should like to here mention the relative value of the newer methods used as an aid in arriving at an early diagnosis.

1. The x ray is of great value only in the hands of an expert. By expert I mean one of large experience with the x ray in bone work. He should both make and read the radiograph. In the beginning of the disease, before absorption of the lime salts has progressed very far, only one of great skill with the x ray is capable of making a radiograph or intelligently interpreting it.

2. Tuberculin for diagnostic purposes is being used quite extensively.

M. B. Tinker (*Johns Hopkins Hospital Reports*, xi, p. 535) used it as a routine in Halsted's clinic and concludes: "If properly used in suitable cases, I am sure its use will prove most helpful in the diagnosis of tubercular from other surgical affections."

Sibley (*New York State Journal of Medicine*, ix, p. 425) believes the subcutaneous injection of minute doses of tuberculin a delicate test of the existence of tuberculosis in the bones.

Burrell (*Communication of the Massachusetts Medical Society*, xix, p. 303) and Bradford and Lovett (*Orthopædic Surgery*, third edition) believe tuberculin for diagnostic purposes does not yield sufficiently reliable results to enable one to speak positively in any given case.

We believe that in conjunction with a careful physical examination and x ray findings it is a valuable aid in the diagnosis.

In the early stage of joint disease where effusion is present, or the second stage, or stage of liquefaction, in bone, aspiration and test by inoculation or culture of the fluid obtained will often prove the diagnosis. If such fluid proves sterile, tuberculosis should be suspected.

The value of an early diagnosis in the surgical treatment or prognosis of tubercular joint or bone disease cannot be overestimated.

In the operative treatment of tuberculous bone and joint disease it should be remembered that any of the other aids or methods of known and definite value should not be neglected. Because one institutes operative measures, it should not be expected that from these measures alone and unassisted the best results will attain. As is well known, we cannot remove all the tuberculous material, nor is it considered best by some that we should try to do so (Ely, *loc. cit.*). Some disease will remain and the fight must go on. Here is where the various definite aids in the treatment mentioned above come into use.

The extent of the operative procedure is determined by the, 1, stage of the disease; and, 2, the age and condition of the patient.

The stages are spoken of as: 1. The discrete tubercle located in the epiphysis of the bone or in the synovial membrane. 2. The confluent stage, or stage of liquefaction, when the tubercles run together, forming a caseous or pulpy mass, often with considerable fluid. 3. The stage of abscess or so called abscess formation, with or without mixed infection, and the formation of sinuses.

The operative measures usually indicated are: 1. Removal of bony foci; 2, incision or aspiration; 3, arthrectomy; 4, resection; 5, amputation. In the early stages bony foci of considerable size can be removed even from the epiphysis of children and filled with iodoform or some form of absorbable bone plug, without great sacrifice in the length of the bone, Sir W. Macewen (*British Medical Journal*, 1909, ii, 949), in an excellent paper, from which I quote freely, expresses the belief that it is very much better to do this than to run the risk of liquefaction and extension to the cartilage and joint, which renders ankylosis inevitable. A prolonged treatment with splints, which endangers the integrity of the soft tissues, muscles, nerves, etc., and consequently the ultimate function of the limb and general health of the patient, should be avoided.

If the primary focus is in the synovial membrane, aspiration, followed by injection of iodoform glycerin emulsion, ten per cent., or formalin glycerin, two per cent., repeated at intervals of from one to three weeks, and the joint placed at rest, should be followed until a cure results or the disease extends, involving the bone, cartilage, and joint cavity, when arthrectomy or resection is necessary.

Ely (*loc. cit.*) recommends instead of arthrectomy or a radical resection in the knee joint a removal of the diseased synovial and soft parts, a removal of the articular ends of both bones, without any attempt at removing all the diseased bone, then a suturing of both bones together, aiming to secure an early ankylosis. He states, when this is accomplished, that the remaining tuberculous disease will soon be overcome. To the author this seems reasonable, in accordance with our knowledge of the pathology of the disease, and worthy of trial.

In 150 arthrectomies, largely in children, Koenig (von Bergmann's *Textbook*, iii, p. 613) only experienced three deaths; of 133 of these patients watched later, twenty-three died, twenty-seven remained entirely unhealed.

Where it is desirable to remove all the tuberculous tissue, resection is preferable unless contraindicated by the age of the patient. Resection is the ideal operation for adults, when more conservative measures fail. In children under fifteen years, in whom removal of the epiphyseal cartilage checks the growth of the bone, resection produces a worse than useless limb, consequently one ought not to delay operative measures too long or beyond the stage in which arthrectomy or partial arthrectomy will remove the disease. If the patient is operated on before the capsule of the joint is destroyed, and the epiphysis undermined, the operation need be less extensive and the functional results much better. In the shoulder, where considerable motion is desirable, an early operation to preserve the muscular attachments should be the rule.

Scudder (*Annals of Surgery*, xlix, p. 696) has shown that excision of the shoulder, with good functional results, is possible.

It is in the treatment of hip joint disease that the greatest diversity of opinion exists. The orthopædists believe in conservative treatment from the beginning to almost the end. The surgeons advocate only short conservative treatment, before attacking the site of the disease. Macewen aims to reach the bony focus near or in the epiphysis by a transsynovial operation (*loc. cit.*) done in two stages, the object being to remove the disease radically, fill the bone cavity with Mosetig iodoform plug, and close the wound without endangering the joint cavity.

Primary disease of the head or neck of the femur or its synovial membranes should be treated by iodoform glycerin emulsion, ten per cent., injected intraarticularly and parenchymatously, and accompanied by immobilization of the limb. If the disease involves the acetabulum and the destruction of bone is considerable in the head and neck, or either one of these conditions be present, then the joint should be opened, the diseased tissue removed, and the joint dealt with, as recommended by Murphy (*Journal of the American Medical Association*, May 20 and 27, 1905), in which soft tissues, muscles, fascia, fat, etc., are interposed between the ends of the bone and acetabulum and the limb dressed in abduction and immobilized. This principal is also carried out by Murphy in other joints. Murphy also points out that the muscular attachments to the trochanter should be preserved as far as possible.

Baer (*Johns Hopkins Hospital Bulletin*, xx, p. 271, 1909) recommends the use of animal membrane, the chromatized pig's bladder, interposed between the ends of the bones of the hip and other joints, for the preservation of mobility.

After resection of a hip joint, carbolic acid, ninety-five per cent., followed by alcohol, should be applied to the tissues. The cavity should then be thoroughly dried and impregnated with iodoform or filled with a Mosetig plug, and closed. When abscess is present and producing tension in the capsule, it should not be allowed to go on to spontaneous rupture, but it is advisable either to, 1, aseptically aspirate and inject with iodoform emulsion, or formalin glycerin, two per cent., or, 2, incise and treat radically.

In this procedure strict antiseptic precaution should be observed to avoid secondary pus infections. It is to be hoped that Willard's (*loc. cit.*) method of treating the mixed pus infections by alternate use of autogenous bacterins and tuberculin will lessen the present high mortality in such cases.

Hausner (*Zeitschrift für orthopädische Chirurgie*, I, xxv, 1910) expresses the belief that we are returning to the conservative treatment of tubercular hip joint inflammation. On the other hand, Koenig (*Berliner klinische Wochenschrift*, xlvi, p. 429, 1909) says the tendency for operative interference is increasing. He believes the severity of the pathological process plays the main part in the question of cure. Koenig (*Ibidem*) in 568 cases of hip tuberculosis, treated 457 conservatively, but 173 patients had later to be operated upon. Only the very severe cases in which a cure without operation seemed impossible were operated in.

When sinuses exist, repeated injections of iodoform glycerin, ten per cent., or Beck's paste work wonderfully good results.

David and Kaufman (*Illinois Medical Journal*, October, 1909) report a death from bismuth poisoning following the injection of sixteen ounces in a case of hip disease with sinuses.

Amputation is sometimes necessary in severe neglected cases of joint disease, and where excision has failed. It is remarkable how quickly these patients improve after this procedure unless the disease has invaded other organs, and there is beginning amyloid disease.

Later in life we often find flail joints and relaxed capsule, with tendency to luxation, which also require amputation.

Lexer (*Medizinische Klinik*, xx, p. 817; *Centralblatt für Chirurgie*, August 20, 1908) has been quite successful in transplanting bone and living joints, as has Carrel, of New York. The work of these authors suggests what is possible in the future treatment of tuberculosis of certain joints at least.

The advantages of operative treatment are: 1. The disease can at once be thoroughly eradicated, or so nearly so that the patient easily overcomes the disease. 2. Dissemination of the disease is prevented. 3. The treatment is shortened. 4. The general condition of the patient rapidly improves. 5. The length of the limb and function of the joints are preserved to the best possible degree.

100 STATE STREET.

THE DIAGNOSIS AND TREATMENT OF TUBERCULOUS JOINTS.*

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The diagnosis of tuberculous joint disease depends upon a consideration of the following four groups of factors, namely: The history of the case, physical examination of the part, radiographical examination, and tuberculin test. Successful treatment of tuberculous joints demands *early* diagnosis, and in discussing these factors it is intended to bring out particularly the essential features in each which are of aid in arriving at an early interpretation of their significance.

Thus, in the history, the knowledge of the presence of tuberculous disease in the patient's family is important. Hereditary predisposition and environmental conditions are prolific sources of tuberculosis in general. The previous health of the patient as regards infectious diseases, especially measles, cervical or inguinal adenitis, and persistently recurring attacks of bronchitis, is also important as evidencing the previous existence in the system of some focus of tuberculous infection. In addition to these specific instances of ill health the state of nutrition during childhood is also of significance as so many of the poorly nourished, undeveloped children are subjects of a localized tuberculosis from which they frequently recover without a correct diagnosis having been made. A history of trauma must be given full weight for it is now pretty generally understood that an injury is the exciting cause which localizes the process in a given joint.

A history of frequent growing pains in the legs leads to suspicion of the lumbar spine or hips. Pain in the knees with a negative knee examination often is followed by a tuberculous hip or sacroiliac infection. When an adult has gradually become stoop shouldered allowing the abdomen to protrude and the lumbar spine to curve forward an immediate examination may reveal dorsal Pott's disease before the kyphos develops. Indefinite "neuritis" in the arms or prolonged periods of aching in the shoulders after exertion often antedate the appearance of a hump in the dorsal region or a curve in the cervical part of the spine. Attacks of lumbago made worse by exertion are highly significant in children, and in the same way frequent headaches or recurring attacks of stiff neck in children should lead to a careful inspection of the cervical spine before the laryngologist finds a post pharyngeal abscess.

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*Read at a meeting of the Hartford City Medical Society, June, 1910.

The gradual onset of the trouble is important in children, but in adults so many other chronic arthritides are met with that this point does not carry much importance with it.

Physical examination.—The graphic picture, so well known to all of you, of a withered leg, flexed thigh, and discharging sinuses surmounted by a poor, pale, undersized child, is not the picture of the physical examination which it is desired to present to you here. But, rather, the diagnosis must be made when the only physical signs are a beginning limp and slight muscular rigidity in the part affected, and a slight enlargement of the glands above the part, with the presence of a minimum amount of local tenderness and heat. At this early stage motion may not be limited at all or, if so, not more than a few degrees and can often be determined upon only by a careful comparison with the companion joint. Atrophy of the muscles above and below the joint is an early manifestation and is of especial significance in those baffling cases which have a history of joint trouble of short duration which has apparently subsided. A feeling of rigidity on rotation of the thigh and an inclination to knock knee are two early signs in the hip and knee joints respectively.

Radiography is one of the new forces which, in the past few years, has done much to render possible an early diagnosis of tuberculous joint disease, but it requires experience in interpretation to determine the lesion and, when no lesion can be found, it requires mature judgment not to exclude possibility that the lesion exists nevertheless. Tuberculous joint disease usually begins in the epiphyseal end of the bone above or below the joint—though, of course, it sometimes begins as a synovial process. A radiograph in an early case, therefore, shows an area of rarification of greater or less size according to the length of its duration, and the activity of its destructive power, in the epiphysis of one of the bones entering into the formation of the joint. Such areas in early cases are necessarily small and the lessening in density is slight, hence the least failure in radiographical technique or the slightest carelessness in reading the plate may result in completely overlooking the minute area. The early synovial cases usually present a thickening of the soft structures of the joint, which can be determined by comparing the well side with the affected. Squaring of the epiphysis affected is a common early manifestation also.

The tuberculin test is the best and most reliable diagnostic agent for incipient tuberculosis of bones and joints, but in making this generally accepted statement of fact it is necessary at the same time to point out that the test does not consist in rubbing tuberculin ointment on the skin, nor in dropping tuberculin into the eyes, nor yet in scratching the skin and rubbing tuberculin into the sore. A constitutional reaction with a definite rise of temperature, following the injection of tuberculin coupled with a local reaction in the affected joint is positive evidence that the joint is tuberculous. But a constitutional reaction without a local reaction is not any evidence that the joint is tuberculous any more than is a positive von Pirquet test. In addition to being the best and most reliable diagnostic agent in early tuberculosis of joints, tuberculin finds in these cases the most ideal field for its use as it not only informs us that tuberculosis is present but it also shows us exactly where it is. The great value of tuberculin as a diagnostic agent in joint cases is shown in the negative way in the following case:

Mr. W. had a suspicious knee joint which had given trouble for a year. A subcutaneous tuberculin test resulted in a definite rise of temperature to 102° F., but not the slightest discomfort resulted in the knee as the patient walked over a mile while his temperature was elevated. In the diagnosis, therefore, tuberculosis was excluded and subsequent events proved the conclusion to be correct for the knee is now entirely healed. Thus a positive reaction proves tuberculosis to be present and a negative one proves it to be absent.

Treatment.—This may be best considered under the two definite headings, constitutional and local.

At the outset it must be realized that joint tuberculosis is merely a local manifestation of a general or constitutional infection, depending upon an underlying constitutional cause plus a local exciting cause. Resistance to the invasion, therefore, is just as much a matter of general condition as it is in the case of pulmonary tuberculosis. All the well known rules for combating general tuberculosis, therefore, are of equal importance in osseous tuberculosis. Abundant fresh air, sunshine, good food, systematic tonics, rest, etc., are all to be employed. Tuberculin subcutaneously given in therapeutic doses has not, apparently, been of great value. It is felt, however, that its use is based on logical grounds and that it should be persisted in for a longer period before definite conclusions are reached. At present some writers submit enthusiastic testimony as to its value; others feel that they can find no benefit from its use, and so far as I know, none have found it to be a detriment. Theoretically and reasoning from analogy it seems that it must be an addition to our armamentarium, and it is the writer's belief that the disappointment of some observers is the result of their own notions as to what tuberculin ought to accomplish rather than to any real lack of action in osseous tuberculosis.

The local treatment of tuberculous joints is in a state of upheaval at the present time, induced by the practice of absolute rest on the one hand, and on the other hand by the practice of continuing the function of the part up to the point where subjective and objective symptoms become marked. Time was when all tuberculous joints were firmly fixed and kept so for month after month, and the time seems to be dawning when all tuberculous joints are to be partially protected and allowed to go on month after month without much change in their condition. The advocates of these two opposing methods have many strong points to be noted on each side and, probably, as in most arguments they are much nearer together in principle than their wrangling over details might indicate. Absolute fixation removes all possible source of irritation by trauma, prevents deformities, stops pain, and has in every way proved so much better than the methods which preceded it that it cannot be lightly laid aside. On the other hand, this absolute limitation of function unquestionably must lead to a lessening of the local resistance by interfering with the circulation and nutrition, especially in the localities where the joints above and below the affected one are immobilized. Hence it has been urged that instead of confining the part absolutely, functions should be allowed up to the point where subjective and objective symptoms occur.

The fact is, however, that no specific rules can be made which may be mechanically applied to every patient who presents himself, and it may be just as important for a given tuberculous joint to receive absolute fixation as for another to be allowed a certain amount of use. And the requirements in these cases, moreover, depend not alone upon the anatomy of the lesion but also upon the patient's general condition, his home surroundings, his ability to do what is advised, and many other like considerations. It is quite apparent, therefore, that each case must be studied separately and must be treated in accordance with its individual merits. It is equally apparent, however, that there are certain general lines along which most of these cases may be treated. It would be folly to allow weight bearing in a case presenting a rapidly increasing tuberculous focus in the epiphysis before it had broken through into the joint, as this treatment would only tend to hasten the joint invasion. On the other hand, if such a focus has broken through and the patient's surroundings are such as to render certain a deterioration in his general health, if he is confined too closely, then a moderate amount of function should be permitted in the hope that the local resistance would thus be maintained at its greatest efficiency. In the same way acute, rapidly progressing cases require fixation provided this is obtainable without injury to the general resistance. Subacute, mild cases, may be benefited by temporary fixation, followed by use under protection. Certainly chronic, sluggish cases, where the muscles are atrophied and reparative processes seem at a standstill, are improved by use under slight restriction and protection. It seems highly probable that the pendulum did swing too far in the direction of absolute and prolonged fixation, and it is well that this mistake is so generally recognized, but surely this is no excuse for allowing the pendulum to swing too far in the opposite direction. The dictum of Lorenz, who says that an absolutely stiff joint is the best result that can be obtained in cases of tuberculous coxitis is, to name a specific instance, manifestly far too sweeping. To assume on this basis that all cases of coxitis should receive ambulatory treatment with only enough protection to limit the pain is unwarrantable, and the thousands of cases of cured tuberculous hips, enjoying with impunity a full range of motion, cry out against such an outrage.

All of the many operations which have been employed for the treatment of tuberculous joints have a certain field of usefulness at times. In a general way it may be said that, contrary to the popular idea, joint tuberculosis in adults—considering fresh invasions and not merely the lighting up of old processes—is fully as amenable to conservative treatment as it is in children. The primary adult cases outside of this class are apt to be fulminating cases. Goldthwait gives the following reasons for the practice of radical surgery in adults: a. Impatience oi conservatism, or inability to give up time to conservatism. b. Failure of conservative methods either to control or check the local advance of disease. c. Danger of general infection. d. Preservation of function in joint. e. Intolerance of apparatus.

In any case, however, regardless of the location, before an operation is attempted the part should be put at rest for a sufficient period to allow the process to quiet down as the danger of absorption and extension to other parts is much lessened in this way.

Excision of a small epiphyseal focus is indicated wherever the patient's general condition warrants operative interference and it can be determined that the invasion is limited to an accessible area. Great care must be exercised in this, as in all operative procedures on tuberculous foci, to prevent extension of the disease through the smearing of the freshly opened vessels and lymphatics with tuberculous material. Before closing such wounds it is advisable to swab the exposed surfaces with some strong antiseptic. Obviously such operations in children are not in order, on account of the consequent interference with growth. Hence all the operative procedures are pretty strictly limited to adults. Excision is indicated if suppuration has taken place or if local irreducible deformity exists, and in cases in which the constitutional effects of disease are present. Erasion of the diseased cartilage and local extirpation of the original osseous focus is the preferable procedure provided there is still intact enough cartilage to allow thirty degrees of motion—otherwise excision with a resultant stiff joint is indicated.

Amputation is becoming rarer all the time. Earlier diagnosis and successful conservative treatment are responsible for this. It should be reserved for those cases in which great constitutional disturbance is in evidence, with low resisting power, or the presence of pulmonary or renal complications; or for the rare instances where an artificial limb would be more efficient than the mutilated one.

In this connection one other operative procedure should be mentioned, namely, osteotomy for the correction of deformity. Its importance is based upon the fact that a healed process is much more likely to be relighted in a deformed limb than in a straight one owing to the greater traumatism incident to use of a deformed limb. Hence osteotomies which correct these deformities are indicated in healed tuberculous joints.

Bier's hyperæmia treatment has a positive field for usefulness. The constriction bands are employed in the closed cases and the suction cup is added in the discharging cases. Pain is relieved, local resistance is increased, extension of the disease is hindered, and healing is hastened. It must be understood, however, that hyperæmia is a two edged sword and the technique must be properly carried out to avoid creating fresh disaster.

Abscesses, provided they do not cause great pain, do not interfere with function of a joint or some special part by pressure and are not part of a miliary infection, are safe if they are closed, and had best be ignored. The primary focus cannot as a rule be extirpated, and opening these abscesses only opens a route for fresh infection and furnishes a mode for entrance for other organisms. If, however, it becomes necessary, on account of the mechanical interference involved, to drain a cold abscess, this is best done by aspiration wherever possible. If this is not feasible one may still incise healthy tissue a short distance from the abscess, thoroughly cleanse the cavity after evacuation, and then loosely sew up the wound without drainage and get prompt healing.

Of the various complications or sequelæ of tuberculous joints, sinuses deserve special mention. While the joint process is active, sinuses which act as drains should not be interfered with, and no active measures for their closure should be attempted. If, however, there is present a mixed infection bacterial vaccines should be employed to control the complicating process. When the sinuses persist after the joint process is controlled and there is present no sequestrum injections of Beck's bismuth paste have proved of great value in healing, and this method is decidedly more efficacious than the older processes of curetting or excision.

In the local treatment of spinal tuberculosis special mention must be made of Colot's method of applying plaster casts. These casts are made to extend above the shoulders, thus accurately controlling the mobility of the spine. A large section is cut out in front, a window is made over the area of the kyphos, and into this window felt pads are crowded as fast as may be without causing painful pressure —the open space in front receiving the tissues thus pushed forward and a correcting force is thereby constantly exerted on the deformity. It goes without saying, that this procedure must not be pursued too rapidly on account of the danger of increasing the process by the mechanical irritation.

803 MAIN STREET.

A RATIONAL BASIS FOR THE TREATMENT OF NARCOTIC DRUG ADDICTION.*

By GEORGE E. PETTEY, M. D.,
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As truth becomes known the rule of reason becomes more and more supreme. Just in proportion to the degree in which we learn to account for conditions which exist by processes of reason superstition and fear vanish.

But a few years ago malaria was held to be a disease due to bad air, marsh gas, fogs, dampness, poisonous gases from decomposition of vegetable matter, etc. These and many other such conditions were pointed out as its cause. We now know that none of these things were true, but so long as they were held to be true they influenced the opinions and conduct of men. So with yellow fever. It was regarded as both infectious and contagious. The poison causing it was thought to reside in the odor arising from the body of those affected with the disease or in the breath of the patient. It has been held to be transmissible by contact with the clothing or bedding or from the body of the patient, in fact, by almost every means which the unrestrained imagination of man could conjure up, and thousands of pages have been written in explanation of the operation of these various "causes," but until the discovery of its real cause and of its mode of transmission no material progress was made toward its prevention. With the advent of the truth, with the discovery of its real cause and mode of transmission, reason supplanted superstition in our dealings with it, and in the space of a few years yellow fever has been almost banished from the face of the earth.

The development of our knowledge of the pathology and treatment of the narcotic drug additions has been beset with similar difficulties.

Those who have studied the subject have been confronted by conditions which they have interpreted in diverse ways, but in their effort to reason backward from effect to cause they have been lost in the hazy marsh of superstition as completely as were those who wrote on malaria and yellow fever a generation ago. Their bewilderment was increased and the truth longer concealed by the dogmatic teaching of the school of structural pathology. For many years it has been insisted by our leading writers on pathology that every manifestation of disease had behind or underlying it a structural pathology.

Writers on drug addiction, accepting this teaching as true, have striven in every way to demonstrate a structural lesion in drug addiction. Every structure in the body has been minutely examined, but the microscope has steadily refused to verify the presence of any lesion which would account for the conditions present. The manifestations which were most prominent being of a nervous character, some obscure lesion of the nervous system has been supposed to exist, but no one has been able to demonstrate its presence.

At this point writers have diverged in their views. Some, while being unable to demonstrate the presence of a structural pathology, have still held that it did exist and that this obscure, undefinable, undemonstrable lesion was the cause of all the manifestations of disease seen in these cases. Being uncertain as to pathology, their suggestions as to treatment were as full of unreason and superstition as were those of the writers on malaria and yellow fever. They, however, took refuge in a generic term, neurosis, classed these addictions as such, and advised symptomatic treatment.

The nervous manifestations presented in these cases were so nearly innumerable and so mystifying that the practical man who attempted to treat a patient of this class symptomatically soon found himself in deep water and very shortly would throw up his hands in holy horror and cry out with Da Costa and others "There is no remedy for the opium habit," "There is no help for the widow's son." Those who held the views of writers of this class practically gave up these cases as hopelessly incurable.

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Another set of writers, more materialistic but less consistent, not recognizing any other than a structural pathology for disease and being unable to demonstrate the presence of structural lesions in drug addiction took the position that there was no pathology. Writers of this class dismiss that part of their subject with the sweeping statement, couched in four words "The pathology is nil." This class of writers, however, was still confronted with the manifestations attending the use of narcotic drugs, they were still confronted by living facts for which they must account in some way. In an effort to escape from this dilemma with some show of having "saved their face" took refuge in the word *vice*. They therefore class the narcotic drug addictions as a mere vice, a perversion of the will, a degenerate state into which the victim enters by choice, being prompted or led by inherited or acquired degeneracy. They teach that all who fall into the use of narcotic drugs were, primarily neurotics, weaklings, who, by yielding to the influence of the drug, have been made doubly unreliable. They make free use of such terms as pervert, fiend, inveterate liar, etc., and class every drug user as one who has wilfully yielded his God given powers of self control and voluntarily accepted the domination of a mere vice.

Those who held this view as to the nature of these conditions were, by the very fact of holding such views, totally unfitted to make suggestions for treatment along rational lines. With them, as there was no demonstrable structural pathology, there was no disease to treat, therefore there was nothing left to do but to deal with the patient as one who was dominated by a mere vice, one who was wilfully abandoned to a loathsome habit which he could abandon by the mere exercise of his will if he chose to do so. Since he did not abandon it, the conclusion was reached at once that he did not desire to do so, that the *will* was absent, and they forthwith undertook to supply this supposed deficiency by coercion. They advise taking the drug away abruptly and confining the patient where he would be forced to forego its use, that, in as much as he did not abandon the use of the drug voluntarily, he should be forced to do so. This course was and is still advised by many, notwithstanding the fact that others who have tried it have wound up with a maniac or a corpse to testify to the success of their efforts.

Any one holding the views of either class of writers I have referred to who attempted to treat a patient of this class in accordance with their teachings must have been bewildered by the number, variety, and intensity of symptoms presented upon the withdrawal of the drug. It must have seemed strange that a condition having no pathology, a mere vice, could throw the patient into such great distress and finally into such a state of collapse as to often end in dementia or death. The man who was prone to do some thinking on his own account must have frequently asked himself the question, could it be possible that dropping a mere vice, a simple change of moral purpose and conduct could throw the subject of such a change into a fever, resembling in type and severity breakdown fever? Could such a change of moral purpose bring on severe intestinal colic, nausea, vomiting, diarrhœa, labored and deficient heart action, rigors, cold, clammy sweats, and finally collapse ending fatally unless met by most active therapeutic measures? Was not the development of these symptoms following the withdrawal of the drug sufficient to convince any one that there was a real pathological condition present? It did so convince me and the rejection of the teachings of the authors on that point soon led to the rejection of their teachings on all other matters connected with these conditions. This was the first and most essential step in the development of a rational treatment. Divesting myself of all preconceived notions as to the nature of the ailment to be treated and forgetting, for the time being, that the patient was using a drug, I entered upon an examination to determine the physical condition of the patient.

I found his skin dry and husky, tongue coated, breath foul, bowels habitually constipated, digestion impaired, heart action defective, and other evidences of portal engorgement. When the administration of the drug was discontinued and the patient allowed to go for a time without it, some of these symptoms gave way to others of a different character, while others of them were merely intensified but not changed in character. The dry skin gave way to excessive sweating, the constipation to diarrhœa, colic, nausea, and other evidences of gastro-intestinal disorder.

At this stage of the investigation I asked myself the question, if this patient was not taking a drug and had never done so, how should the conditions here presented be treated? There could be but one answer. The evidences of accumulated excrementitious matter and the necessity of its removal from the system were too plain to be mistaken.

With the purpose of treating the patient and not his addiction, active steps were taken to free his system from toxic matter. Calomel, podophyllin, cascara, rhubarb, castor oil, and other agents usually employed as purgatives were tried, but none of these acted promptly or efficiently, on the other hand their effects threw the patient into great distress because of the nausea, colic, vomiting, etc., which they excited. Reaching the conclusion that the failure of the purgatives to act was mainly due to the suspension of the motility of the bowel by the paralyzing effects of the opiate and remembering that strychnine excited intestinal motion by direct stimulation of the motor centres, I began to combine strychnine with the purgatives given and the results were more satisfactory, but ordinary medicinal doses made little impression. Before free evacuations were secured, much larger than the usual medicinal doses of strychnine had to be given. It was found, however, that, when the motor function of the bowel was fully established by the effects of strychnine; little if any larger doses of the glandular stimulants were required to secure prompt and free action of the bowel of a drug user than of one not using a drug. When free evacuation of intestinal contents were secured in this way the condition of the patient greatly improved and the demand for the narcotic was nothing like so urgent as before the purgation. The circulation was greatly improved, the heart action was less rapid and the pulse was fuller and of better quality. The sweating spells which had been so prominent upon withholding the drug were hardly noticeable now, and the tendency to collapse had disappeared.

At this stage it was decided to withdraw the opiate altogether and that was done. In the course of twenty-four hours the suffering of the patient was severe, but this distress was mainly of nervous and mental origin. The heart action was good, there was no diarrhœa, nausea, or colic as there had been before elimination had been carried out. The skin was moist but there was no excessive sweating and no tendency to collapse, in fact, no dangerous symptoms were present.

One remedy after another was tried with varying success, in an effort to relieve the patient's suffering. It was found, however, that some member of the belladonna group served the purpose better than any other which did not contain an opiate. Without attempting to give in detail the steps by which the views which I now hold were reached, I will say that in the treatment of a series of 200 cases the conclusion was reached that the retained excrementitious matter, the extremely toxic condition of the system was the cause of *all the dangerous* and *most of the painful symptoms incident* to the withdrawal of an opiate, in fact, that, when the system was freed from toxic matter and the portal system disengorged, morphine or other opiate could be at once withdrawn without shock, collapse, heart failure, diarrhœa or other dangerous symptom and, that the suffering incident to such withdrawal would subside in a few days' time without further treatment of any kind. It was also found that this suffering, severe as it would otherwise be, could be obviated and these days passed in comfort by the discrete administration of any member of the belladonna group of remedies. All desire for the opiate as well as all necessity for its use were removed by this course of treatment.

In watching the convalescence of a large number of drug patients the further conclusion was reached that in order to insure the patient a successful convalescence, he must be protected from severe suffering, nerve strain, and damaging mental impressions during the treatment, in fact, that no cure could be expected from any plan of treatment which involved severe or protracted suffering such as do the reduction methods heretofore so much in vogue; that no drug patient could be considered cured until he had been made mentally and physically independent of all drugs, taught to rely on his own resources and fully convinced of his ability to do so. His habitual dependence upon his drug must be supplanted by independence and self reliance. No drug patient can be considered cured so long as he takes a tonic or drug of any kind. He must not only be freed from the drug to which he was addicted and all substitutes for it, but also from all tonics or other remedies used in his treatment upon which he might place even a mental reliance. He must be brought to such a state of mental, moral, and physical health as to not only have no desire for his drug or stimulant, but before he can be considered really cured he must have acquired such a fund of reserve physical and mental strength as to be able to stand the strain of his ordinary vocation without feeling the need of stimulation.

The treatment of more than 2,000 cases since these conclusions were formulated has not furnished reason for any change of opinion in this matter, but on the contrary have fully confirmed the conclusions reached in my first series of cases.

In order to treat any disease successfully it is necessary to have a knowledge of its pathology and to aim directly at the removal of the cause of the disorder. While there are no structural lesions in the narcotic drug addictions, the functional disorders presented in these cases are ample to account for all the symptoms which arise upon the withdrawal of the drug. By the treatment of these disorders, which are mainly of gastrointestinal origin, upon well known physiological principles and in accordance with the general principles of medicine the patient may be promptly relieved of his addiction and brought to a condition in which he is independent of all drugs. Not only that, he is spared the torturing experiences incident to the gradual reduction method, the intense agony and dangers of the sudden suppression method as formerly practised, and brought into a state of comfort and well being from which he can make a rapid and successful convalescence.

This rational method not only robs the treatment of the dangers and most of the suffering, but it brings the patient into so much more satisfactory conditions, both mentally and physically, that his chances of permanent emancipation are many times greater than by any method of treatment heretofore employed. Any method of treatment which involves severe or protracted suffering is to be condemned. Passing through such an ordeal reduces the patient's resisting powers to such an extent that, even if he succeeds in getting off of the drug by it, he has little if any chance to resist a return to its use. He must be freed from his incumbrances and placed on his feet with some firm ground beneath him before he has a chance to stand. This can be done for a drug user as certainly and promptly as any other chronic ailment can be cured.

958 South Fourth Street.

THE KIND OF INEBRIATE WHO NEEDS STATE CARE AND THE KIND WHO NEEDS THE PRIVATE SANATORIUM.

By C. C. Wholey, M. D.,
Pittsburgh, Pa.

Case I. Mr. M., who strikingly typified the first class to which I refer, was of a rather squat build and shambling gait. He was well nourished, but sallow and doughy looking. He exhibited delicate hands of the tapering, artistic mould, which had known little physical activity. His eyes did not meet your own squarely.

Family history was bad. Mother had been insane for twenty-five years; four sisters had been temporarily insane at the puerperium. Father drank moderately for a Scotchman. Patient had been addicted to alcoholic excesses for twenty years, to which morphine has been added for the past seven. His debauches usually began with alcohol and terminated with hypodermic injections of morphine, the maximum dosage of the latter reaching fifteen grains daily. At this juncture the hospital or asylum usually figured in his history. He had been in numerous institutions for treatment for his addictions and had quickly relapsed after each. His custom had been to pass from city to city and, when not taken into custody by the authorities, a hard luck story about the job he could land if only he were put on his feet, had generally touched some charitable heart and supplied him incidentally what he really sought, namely, the comforts and care of a hospital or sanatorium.

Though I made it very clear to the man's friends that I considered him a hopeless case, they insisted upon my treating him; and I gave him all the attention and time bestowed upon the patently hopeful case. His craving for narcotics was successfully and beyond question removed. He was carefully fed, massaged, disciplined physically and mentally, and to the casual observer looked as if he would assuredly "make good." He was in every way comfortable, eating and sleeping normally and requiring no drugs.

To the trained observer, however, this individual was idle, luxurious, selfish, and with no real sense of obligation to society or to those who were paying for his treatment. He was satisfied to spend entire days reading love and detective stories. He dwelt with zest upon the details of his past alcoholic and drug experiences and repeatedly sought to draw his physician into confidences regarding the modes of administering and the effects of cocaine and other drugs which he probably had not yet used. His unsolicited attestments of being forever done with past follies, to his physician were but an indication of speedy relapse.

The subsequent history of this patient was what I anticipated. He disappeared from the carefully selected home in which his friends had placed him a half hour after his pleasant welcome there. He was drunk that night. He reported for his stenographic duties the next day—late and dishevelled; was countenanced for some days, when his unmistakable lying and dissipation ended the interest of his latest helpers. He was in my office a month later with another story of excuses and the job he was trying to get—again the tramp and morphinomaniac.

This is the type of case which, in a city environment, I consider practically hopeless for permanent cure. He is simply an adult child for whom the constant guardianship of an institution is the only remedy. The solution of the problem for such creatures is that the State shall care for them as it cares for its helpless and insane. They are true degenerates and will never gain sufficient stamina to resist temptation if circumstances place them in an unfortunate environment; after any course of treatment the same tendency to dissipate the same perverse traits of character will remain. In custodian colonies such individuals can often be made self supporting, thus relieving society of the financial and demoralizing burden they now constitute. Every State must sooner or later provide for this class of derelict.

I wish now to record a case history which illustrates a very different type of inebriate:

Case II. Mr. B. was referred to me for alcoholism. He was a man in easy circumstances, age thirty-three, of nervous temperament, was energetic, had always taken great interest in athletics and was proud of his own physical attainments. For ten years, he had complained, to use his own words, of "frequent spells of gas in his stomach and intestines" and, also of "a lump in his throat and of difficulty in breathing." These attacks were especially apt to occur after meals. When these attacks first began he was advised to take whiskey for relief. It acted favorably. He was soon using it freely both for the attacks and as a preventive. For two years he labored under a morbid fear that he might die in one of the attacks and indulged to great excess. He was terror stricken if he happened to be where whiskey was unobtainable. His family despaired of his ever being different. Certain members, however, looked upon him as simply perverse and though perfectly able to do so not wishing to change his habits. When referred to me this patient had already been subjected to the gradual withdrawal treatment in two hospitals but without benefit.

Besides the above facts I learned that Mr. B. used strong chewing tobacco to great excess. I found that he had an exceptionally good family history. His mother, father, two brothers, and a sister all living and in the best of health. His neurotic, gastric, and autotoxic condition had received practically no attention in the routinely applied treatments he had received. His tobacco habit had likewise been disregarded, though it played an important part in causing his distressing symptoms. His physical condition was good. But he was very nervous, suffering from insomnia and anxiety, resentful of being placed in the same class with the "common drunkard," but very intelligent and anxious and willing to cooperate in any treatment which held out promise of relief. Having gained his confidence, a free use of cathartics, hypnotics, and anodynes was at first necessary in the treatment administered. Isolation was insisted upon and positive assurance of cure repeatedly promised from the beginning. His obstinate constipation and gastritis gradually yielded, his self confidence became restored, and his obsession that death might possibly supervene during an attack, was permanently dissipated. Following a modified rest cure, he reported regularly at my office for several months and when I dismissed him as cured, he was free of any alcoholic indulgence or desire, and I felt sure that he was safe from a return of his habit.

Here we have a typical example of drug addiction where the habit is merely a symptom of some underlying neurosis or phobia—in this case the fear of death superimposed upon the gastric symptoms. We may find in a large percentage of drug habitués some physical or mental cause, which, if we but take the pains to discover, often furnishes us the clue for bringing about a cure of the addiction.

For this class of patients I believe that treatment in a sanatorium, covering varying lengths of time, offers the surest means of successful and permanent cure.

116 Dithridge Street.

TISSUE CELL EVOLUTION.

A Theory of Senescence.

By I. L. Nascher, M. D.,
New York.

A radical theory should have a more substantial basis than plausible argument. Lack of opportunity to carry out experiments to prove the correctness of such theory ought not, however, exclude its presentation if it is rational and the necessary research can be made by those who have the opportunity to do so. In offering this theory of tissue cell evolution I want to state at the outset that it is based upon known facts, a priori assumptions, and conclusions drawn therefrom, and I hope that those better equipped for the research work required will undertake the work of proving or disproving its correctness. To me it seems a rational explanation of the changes that occur in the tissues in the process of growing old. Of the innumerable theories that have been advanced none is free from unanswerable objections. To say we grow old because it is the will of God or fate or Nature, is to evade a scientific explanation. To say the body becomes worn out like an old machine is to employ a fanciful simile without a basis of fact. The absolute idiot has become old and has exhibited all the manifestations of senility in organs and tissues that were rarely or never employed. The virgin uterus undergoes the same change at the menopause that occurs in the uterus of the multipara. Arteriosclerosis, the normal condition of the arteries in old age, occurs in connection with some diseases in maturity, and the individual having these "aged" arteries may live many years before there are any other manifestations of old age. Cazalis's overworked aphorism, taken in its generally accepted sense, needs only the element of truth to make it a medical axiom.

Omitting theories which have no scientific basis, the theories that have been advanced are either biological, mechanical, chemical, toxic (including the action of bacteria), or else are based upon a mysterious "vital principle." The assumption of a vital principle has no demonstrable basis. If there is a concrete something which is the essence of life, which causes all the changes in living matter that constitute life, we have no idea of its nature. If we say it is the soul we have again an inexplicable, intangible, immaterial something not susceptible of scientific proof. We may call it a form of energy not bound by physical laws, since no other form of energy can be converted into it, and it is subject to final extinction. The theories based upon a vital principle leave everything to the imagination and do not furnish a single material fact to which we can fix a scientific explanation. Durand Fardel's theory was of this nature. He believed that when the reproductive organs had reached the time limit of their activity at the climacteric the organism had completed its purpose in the plan of Nature to reproduce the species and perpetuate the race, and there was no further purpose in its existence.

The most prominent theories to-day are Thoma's histomechanical theory and Metchnikoff's theory of toxine absorption and the action of macrophags. Thoma believes that the ceaseless activity of the heart and bloodvessels causes a gradual loss of elasticity in their muscular fibres permitting dilation with loss of tone, the blood current is thereby slackened, and the nutrition of the tissues is impaired. This is a variation of the once popular theory of Demange, who believed that the constant friction of the blood against the lining membrane of the vasa vasorum irritated and finally inflamed them, the larger vessels becoming involved through extension of the inflammation and impairment of their nutrition. Metchnikoff's theory is accepted to the extent that intestinal decomposition and the absorption of toxic matter is an incidental but not the determining factor in the causation of senility. The biological theory that the senile changes are due to changes in the cell was first brought out by Canstatt in 1839. He believed that the cell held within itself the conditions necessary for its existence and destruction. Since then there have been advanced several theories of a similar nature, that changes occurred either in the character of the protoplasm or in the properties of the individual cell. Metchnikoff in describing the action of the chromophag says: "At a given moment the cells of the central cylinder of a hair become active and proceed to devour all the pigment within their reach." Dr. Minot says senility is due to an increase of protoplasm and differentiation of the cells. The theory I wish to present is based upon tissue cell evolution; that there is a progressive evolution in cell life; that newer cells differ from their predecessors; that at one stage of this evolution the cells are most perfectly adapted to their surroundings and their available nutrition; that at this time the cells are in the most perfect condition to perform their functions; that later cells are less perfectly adapted to the conditions under which they exist; that under these circumstances fewer and more imperfect cells are formed; that finally the cells are so imperfect and so poorly fitted for the conditions under which they exist that they either do not reproduce or else the organs which they form cannot perform their functions. Furthermore, different kinds or classes of cells have different stages or periods of evolution, but tissue cells of the same kind pass through the same stages.

We know little of the properties of cells. They have the power of selection of nutrition, of assimilation, of excretion, of growth and reproduction, and some have the power of motion. The why of their activity is as much a mystery as is the source of their vitality. May it not be that in the course of the constant destruction and reproduction of cell life that is going on in the organism there is also going on a constant evolution in cells? It would be analogous to what is going on in the more complex forms of life. No animal reproduces its exact counterpart. There is a difference in oysters coming from the same spawn, in trees growing from the seeds of the same apple. Under the microscope a whole colony of germs of the same variety may look alike yet under the influence of a germicide some will survive longer than others. If they possess greater vitality it is because they possess qualities or properties making them more resistant to deleterious influences.

There is a difference in the properties of the protoplasm of different kinds, and to the difference in the proteid molecules is due their diverse activities. They differ in their special properties, the performance of specific functions, and the general cell properties, growth, assimilation, etc. They also differ in their tenacity of life, in their resistance to unfavorable influences, violence, temperature changes, change of nutrition, phagocytes, etc. Slight differences may be found in tissue cells of the same variety taken at the same time from the same tissue, but we will never find the great differences that exist at different evolutionary stages of the same tissue; that is to say, we will never find at the same time, for example, degenerate senile cells of the ovary and the early immature cells, though we may find, during the menopause, active cells and cells showing early degenerative changes. Of course, under abnormal disease conditions cells of different stages of evolution, imperfect cells, even cells of entirely different character may be found together. The difference in the length of the period of evolution in different cells can be shown by comparing the cells of the thymus gland with connective tissue cells. The first indication of this gland is a faint line which appears about the tenth week of intrauterine life. It grows like all tissues, through cell growth and reproduction, the cells becoming larger and more numerous. The cells formed about the second or third year of the person's life are best adapted to the available nutrition, to their surroundings, and to the conditions under which they exist. The cells and the organ have now reached their limit of size and activity. No satisfactory explanation has yet been given for limitation in size, whether it be cells or elephants. To account for the retrograde evolution of the thymus we must reason from analogy. At the time that the cells are in their most perfect condition they receive an ample supply of nutrition from the blood and as there has been a constant increase in the rate of reproduction newer cells are formed more rapidly than the waste of old cells. But the limit of available nutrition has been reached. The amount of blood has increased, but with the change in diet and the increase in physical activity there has taken place a change in the condition and composition of the blood, it does not contain enough of the particular ingredients necessary to supply the thymus cells. The newer cells are consequently not in such perfect condition as their predecessors, they are more readily destroyed and they reproduce more imperfect cells. The cells are now in the stage of retrogression, fewer and more imperfect cells are formed until about the period of puberty when the cells become extinct. The entire period of evolution of the thymus gland cells is about fourteen years.

The evolutionary changes in the connective tissue cells proceed so slowly that it is not until late in life that any marked change in them is observable and then it is an increase in rate of growth and reproduction. It is impossible to follow up the evolutionary stages of connective cells as the destruction of their microcosm, the individual, ends their career while in the stage of active progressive evolution. Let us apply this theory to the ovarian cells. From the beginning in intrauterine life there is a slow, steady growth in number and size of the tissue cells, until at the time of puberty they are most perfectly adapted to their surroundings, their nutrition, and the purposes of the immature organ, but they are not adapted to the great purpose of the ovaries as reproductive organs. The period of puberty is a transitional stage in the evolution of ovarian tissue cells, the evolutionary changes proceeding rapidly, the newer cells having functional properties not possessed by their predecessors, the older inactive cells disappear, and by the end of that period only new, active cells remain. For the next thirty years, the period of sexual activity, evolutionary changes proceed slowly, for years they are apparently stationary. Toward the end of the active period the organ becomes less active but is still able to perform its functions. The menopause is another transitional stage. The old cells are still active but the newer cells have not the same properties as their predecessors, the activity of the organ decreases with the gradual destruction of the old active cells, and at the close of this period the organ is composed of cells having different properties from the cells of the active period. These new cells are not perfectly adapted to the conditions under which they exist and they reproduce cells still less fitted for those conditions. Fewer and more imperfect cells are formed, and the organ shrinks. The late cells are very tenacious of life and persist throughout the life of the individual.

While cells of the same variety pass through the same evolutionary stages, there may be wide variations in the length of time required to pass through each stage. Hyperplasia of connective tissue may begin in the thymus gland in the second or third year, when that organ first begins to retrograde, in the ovary at the menopause, in the brain at advanced old age. Puberty changes may occur in one person at eleven or earlier, in another at sixteen.

This theory is opposed to the theory of the sudden conversion of one variety of cell into another variety of cells, as the passive cell of the hair cylinder into an active phagocyte; it is not, however, opposed to the rapid conversion through intermediate cells, as the ovarian cells of the anteclimacteric period into the cells of the postclimacteric period. Pathogenic causes may produce sudden and revolutionary cell changes, but such are not considered in normal processes. This theory of tissue cell evolution will explain the greater resistance to disease and deleterious influences at one period of life than at another and in one tissue or organ than in another, the formation of pathological processes and their preference of location, morbid selection, perverted activity, and the whole cycle of the processes of life from its inception to its dissolution.

The most important factor in the life of the cell is its nutrition, which is derived from the constituents of the blood. Impairment of the blood, either through the presence of abnormal constituents or some alteration in quantity or quality of the normal constituents, affects only those cells which derive nutriment from those impaired constituents or assimilate the toxic material. These cells are weakened, their activities are impaired, and they reproduce defective cells. With the improvement in nutrition and other conditions necessary for their existence the cells improve and reproduce more perfect cells. This is the process of recuperation. In senility the cells of most tissues are retrograding, and they are not well adapted to the available nutrition and surroundings. If there is any perversion of this nutrition, cell destruction proceeds faster, reproduction is either abolished or the new cells are so defective that the organs which they form can barely perform their functions. With an improvement in the nutrition there may be an improvement in the cells, but the blood in old age does not furnish the best nutritive material to senile cells and these cells reproduce cells still more imperfect than themselves. The altered metabolism in old age is due to the altered properties of senile cells. Late cartilage cells seem to have a "liking" for calcium salts, that is to say, having the power of selection of nutrition they absorb such salts from the blood more readily than the cells at an earlier period. Other senile cells show the same tendency. Late cells seem to be tenacious of life for they effectually resist bacteria and other agents destructive to earlier cells.

According to this theory the catabolic processes are less active in old age, much of the destruction of the late cells are due to causes that do not prevail at an earlier period. In the spleen, for example, the destruction of the tissue cells is due mainly to the proliferation of connective tissue acting partly by pressure upon the tissue cells and partly by cutting off the blood supply.

Senescence is not due to any one cause. There is undoubtedly a determining factor, a factor which is the subject of the various theories that have been advanced. Upon the theory of tissue cell evolution life must cease when the cells have reached a stage in their evolutionary progress where the organs which they form are so changed that they cannot carry on the functions of life. It makes no provision for disease as a causative or even an essential factor in the production of senility, for disease is abnormal; it is an interference with the molecular condition or some property of the cell. It rejects arteriosclerosis as a causative or essential factor, but it includes it among the contributing factors of senility. Some of the contributing causes hasten senile changes by interfering with vital functions, affecting thereby either the cell directly or its nutrition; such is seen in the anatomical changes in the chest walls whereby the lungs cannot expand properly, the blood is consequently not perfectly aerated, the nutrition of all cells is affected, and the cells of the lungs are directly interfered with. Here we have a contributing factor of the greatest importance, traceable to a mechanical cause. In the constant downward pressure upon the intravertebral discs the compression is greatest where the discs are thinnest, anteriorly in the dorsal region and posteriorly in the other regions. Owing to the greater spinal curvatures thereby produced the articulations of the ribs are altered and the shape of the chest is changed. It would be impossible within the limits of this paper to give all the contributing causes of senility or the circumstances which tend to hasten senile changes.

The theory here presented is in accord with what is known of evolution in higher and more complex forms of life. What the æon is to the universe and the geological period is to mundane life, the years forming an evolutionary stage is to the cell. The tissue of which it forms a part is its world, the individual, its universe. Cell evolution is the natural conclusion of a proposition which has cosmic evolution as its major and race evolution as its minor premises.

Biological and histological experiments are necessary to work out the details and convert into facts, or prove the fallacy, of what seems now only a plausible theory.

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MODERN NEUROLOGY ON SPIRITUALISM AND POSSESSION.

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It is unfortunate that the medical men of America are not better informed in psychopathology. It is to their ignorance of this subject that we should, perhaps, attribute the extensive vogue of spiritualism, clairvoyance, and the various cults of mental healing. It is very different in France, where neurologists since the days of Charcot have devoted much attention to psychopathology and psychotherapeusis.

In the belief that the interest of the cases may incite readers to further study, I venture to place before them a brief report and commentary upon two examples of modern possession, cured by means within the reach of any intelligent physician who troubles to acquire a knowledge of psychic pathology and the mastery of psychotherapeutic technique. One of these was reported by Pierre Janet in his book with Professor Raymond, *Névroses et idées fixes;* the other was reported by Professor Grasset, of Montpellier, in his book *Le Spiritisme devant la science.*

Case I. In a small French village, one of the houses was looked upon for some time by all as haunted. The spirits were of a troublesome nature, and nearly drove the mother of the family distracted; as the greater part of her time was taken up repairing the havoc made by them. Many times a day, the clothes and mattress would be torn off the bed occupied by the grandfather, and thrown in great disorder, sometimes upon the floor and sometimes on the veranda, where one day the fifteen year old daughter, Jeanne, declared she saw a skeleton reclining. This annoyance was continued until the mother devised a plan of tying the clothes and mattress to the bedstead. Every morning, pins, scissors, spoons, knives, etc., were found in Jeanne's bed, and upon one occasion her hair had been cut off. Mysterious knockings were heard. The family then began to seek information from the spirits, and received answers of "yes" and "no." They inquired if some person who wished them ill were the cause of all their trouble. On receiving an affirmative answer, the mother took Jeanne to see the village wise woman, who placed a crystal bowl before the girl and told her to tell what she saw in it. *After several failures,* Jeanne declared that she saw an old woman in the bowl, and described her so well that the mother at once said that she knew who was meant, and took her daughter to the market to see the old woman. Jeanne recognized her at once. They then returned to their former adviser who told them that they could destroy their enemy's influence by burning a live cat in their house, taking the precaution to fasten securely all the windows and doors, and not to allow any one to leave or enter the place during the proceedings. While this was being done loud noises were heard outside the house; and the ceremony terminated by Jeanne, who had not been present at the burning of the cat, frightening her family by a *grande crise de nerfs.* Thinking she was dying, they sent for the doctor, who had her immediately removed to the hospital; and with her the spirits also departed.

The hospital report stated that she had not yet menstruated, though subject to frequent epistaxes, and that she declared that she had passed clots of blood by the rectum.

In twenty-five days, she had only three more grand convulsive attacks; but several times she had several smaller attacks without loss of consciousness. The fits began by an ovarian aura mounting slowly to the throat, then the respiration would stop, and the face would become congested, and she would stiffen with extended limbs. Then began the clownism, and the extended movements and vociferous and discordant shouts, along with rhythmic movements of the pelvis. There was complete insensibility, and she would retain any attitude imposed. The fit would last from ten to twenty minutes, and was followed neither by weeping nor urination.

Examination: Conjunctival and pharyngeal anæsthesia. Pressure on ovary produced sensation of strangulation. At the first examination, anæsthesia of the left arm and trunk; at the second examination, of the right arm and trunk and of the left face; at the third examination, anæsthesia of the limbs, except over a zone of four centimetres like a bracelet around the ankle. A similar bracelet existed above the left wrist, the rest of the limb being insensitive, as were the right hand, the scalp, the forehead, and the face on the left side. Islands of anæsthesia on thorax and abdomen. This topography was very changeable. Its distribution was the same to pain and temperature as well as touch (sic), but the patient could appreciate the form and recognize objects in her hands and describe the position of her legs unless they were crossed, when she declared that the left was right and vice versa (allochiria). The visual fields were contracted, and looking with the right eye she said that red was violet. Hearing, motility, reflexes, and intelligence were normal, but there was dermotagraphia. The moral sense was greatly enfeebled: "She runs after the young people in the hospital," steals money and objects from them, and lies audaciously, inventing scandalous histories of which she is the heroine. At night she stands up and taps on the table, saying to the nurse, "Did you hear? Some one is knocking," as if to make her believe there were spirits. On tonic treatment, the crises disappeared, and her character changed for the better.

A schematic psychology: the subconscious. Grasset, while admitting the element of trickery in the case, asserts that Jeanne was really hysterical, also believing to be characteristic the capacity to perform acts with the anæsthetic hand, and that the allocheiria is characteristic also. He also believed that the table tapping (like the mediumship of Eusapia Palladino) was a fraud of an unconscious kind, agreeing with Ochorowicz that "fraud is inseparable from mediumism, just as simulation is inseparable from hypnotism." He explains what he believes to be the validity of such manifestations by the failure of centripetal nerve forces to arrive at the centre, O, of judgment of contact, and of perception of pain, but that they penetrate to the *polygon,* by which he means the lower centres for coordinating acts, which, though unconscious, may be quite complicated.

A critique of Grasset's schema: Before constructing a schema it would be well to criticise the facts upon which it is based, and without specifically discussing this case in detail, facts, I believe, show the inadequacy of observations such as this as a foundation for a physiological schema of the nervous centres. For it is not difficult to see that the replies to the questions as to her sensibility arose from her habits of lying and indifference; for Grasset had not adopted in his examination the precautions upon which Babinski insists. Even had the method of Head been used a different result would, I believe, have occurred. The girl's morality was such that she said what first came into her head without thought or care of accuracy. To say that red is violet is an absurdity for which there is no pathological basis in nerve structure or function, but for which the psychological basis is easy to find.

To recognize objects with a hand which is insensitive to all the component stimuli by which recognition is possible is a contradiction pathognomonic of dishonesty, either by intent or through indifference. That is not hysteria, except so far as it is determined by the suggestions of an unskillful examination. The evidence for this is not clear, though it is probable. The case is therefore one of *mythomania,*[1] though not quite pure; and the crises were part of the syndrome, although we are not told whether they were removed by suggestion or not. Now it is probable that, to an extent, the environment of scepticism and control, along with the expectation of cure in which she found herself at the hospital, was a great factor in their disappearance. This, however, was perhaps rather deliberate than from explicit suggestion persuasion; and it is probable that, had more scepticism been shown and more direct suggestion persuasion been used after the method of Babinski, the symptoms would have disappeared still more rapidly.

In a more successful example related by Dr. Janet, the confusion of dream thought was the cause of the idea of a belief in *possession by the devil.* Demon possession was common enough in the Middle Ages when its psychology was not understood; but in our day, examples are not common.

CASE II. Achille was a peasant of thirty-three, of little instruction, as is usual in cases of possession by spirits. We can understand his superstitious upbringing from the fact that his father had been accused of conversing with Satan every Saturday and receiving from him a bag of silver. Achille himself was an enormous reader with a retentive memory; but without discrimination and critical judgment of what he read.

The least trifle would upset him, although he was not superstitious or religious, and was a rather solitary young man. At twenty-two, he married a sensible woman, and was happy for several years, until one winter he had to spend some weeks away from home on business. On his return, his wife found him entirely changed; he was somber, dejected, preoccupied, and taciturn; and in a few days he became unable to speak at all, in spite of all his efforts. Under the doctor's treatment, he recovered his speech and began to complain of pains, and to drink enormously, believing he had diabetes as the doctor had said. At the end of a month there was no improvement; so another doctor was consulted, who laughed at his colleague's diagnosis and focussed his attention upon the heart; whereupon Achilles duly assented to the pains in chest and arm, chokings, palpitations, etc., which the eminent practitioner suggested. He went to bed in a very sad state, full of alarm, and wept and muttered incomprehensible words in his sleep. At last one day, more dejected even than usual, after desperately embracing his wife and child, he fell flat and remained motionless for two days. All awaited his speedy death, when suddenly, in the morning, he jumped up with a maniacal howl of laughter which continued for more than two hours in a truly satanic manner. He refused all assistance, and to every question replied "don't do anything; it is no use; let us drink champagne; for it is the end of the world." Then, with fiendish yells, he declared, "they are burning me, they cut me into pieces." After a day of this, he fell into an agitated sleep, and on waking related a thousand terrible experiences, declaring that a demon was inside him forcing him to blaspheme; and he cursed God and the Saints with the most obscene insults against religion. The demon was also twisting his limbs and torturing him. Now and then he would become calmer, and weep, deploring his sad destiny, declaring that the devil had taken his revenge for his unbelief by residing in him, never to leave. When not watched, Achille would run off and hide in the woods and graveyards. He tried to poison himself and to throw himself into a lake, but came out declaring that the devil inside would not let him die, which was a proof of possession. After three months of this, it was decided somewhat late, as Janet humorously said, to take him to the Salpêtrière "into the most favorable place in our days for the exorcism of demons." He there declared that it was the devil who made his tongue work in spite of himself. Now this devil would obey no orders from Janet. Consolation, authority, and hypnotism were in vain; only cursing followed, and the devil mocked the doctor's powerlessness. Then Janet placed a pencil in the patient's hand, with which he wrote automatically. While Achille continued to rail, the hand replied to the questions, gently insinuated by Janet, who at last wheedled the devil to show his power, first by causing Achille to move as Janet wished, and later to command him to sleep. He then goes on to remark: "The difference between former experiences with demons and those of our day is that the possessed one formerly conversed in Latin more or less correct or even a peculiar Greek which the religious people of those days understood or could guess at. I also was able to make some suggestions to Achille's demon in kitchen Latin. It succeeded fairly well; but after a few attempts, it was very evident that the devil and I preferred to talk together in French. On the subject of language, there seems to be a modification in *possession* according to the changes in the surroundings and the epoch. Other characteristics, the commands made by the devil, the resistance of the demon, his final obedience, the actions which he forces the possessed body to make against his will, the sensations even, and the hallucinations which the devil makes the patient suffer, all these essential facts remain exactly the same."

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[1] By this term is denoted a pathological tendency to lie without the more usual motives which dictate dishonesty. The victims of this disorder of the mind are not uncommon. It is regarded as a sign of degeneracy; but it is often due to a lack of the inculcation of habits of accuracy and order in childhood by example rather than precept. It may, however, be the result of a too exigent life in childhood, and express the revulsion of feeling against what was excessive.

Now, this story is interesting enough in itself; but it is doubly so for the subject of our discussion; for Achille's delusion that he was possessed arose in a dream. This is what had happened:

When he went from his home, he had committed a serious fault for which he believed he would not be forgiven by his wife. His meditations upon this made him believe that for this fault he would go to hell. Then came the dream, in which the idea of damnation and hell was personified into possession by the devil. It was the paralyzing effect of this dream which kept him motionless for two days until he burst out into the demoniacal laughter which signalized his awakening.

As a matter of fact, his whole state was one long waking dream, a delirium, a form of somnambulism, as Janet expresses it. Janet failed to hypnotize the patient until he addressed himself to the devil inside, whom he "persuaded to send the patient to sleep, little knowing that he had fallen into a trap and had placed Achille into Janet's power," during which he revealed the whole story of his fixed idea and the long distraction by his waking dream. His silence in the first place had been caused by fear of confessing to his wife. The exaggeration of this caused the loss of speech; for the feebleminded always go to extremes. Thus, a young woman, who had committed a slight fault which she wished to dissimulate, could not help prevaricating about everything, even in the most trivial circumstances. An accidental confession completely cured her.

Te return to Achille, he then began to think and dream of the most horrible diseases; the belief that he had them was reinforced by the unskilful suggestions of the doctors. Then he dreamed of death; and lay as dead, and was seized by the devil one morning during his dream at the moment when a dog barked in the court; "no doubt because the fumes of hell irritated his throat." Psychotherapy easily cured him.

This case illustrates the insistent power of a fixed idea. It also shows how the processes of thought do not cease during sleep; but that they sometimes crystallize in dreams into a picture which may determine conduct. The puerility of this patient's idea makes it only the easier to understand. The way in which it was got rid of by Janet illustrates the importance of entering into the patient's ideas before commencing therapeusis. For if a doctor allows his patient's sympathy to be alienated from him, only failure is courted. This is especially the case in hysterical patients. As in normal life, the most successful educator is he who enters into the mentality of his subjects, and then leads them out of the falsity of the notions they may hold.

The mystical tendency is a fertile source of mental obliquities productive of psychoneuroses. It is this tendency which is responsible for the growth of Christian science. The reeducation of people of this kind forms a large part of a neurologist's task. But the family physician could prevent incalculable harm were he able to advise more intelligently than he now can with regard to the psychic life of many of his patients. It is not so very difficult an office if one remembers that the prime need is the truth. By this is meant a straightforward, clear, honest, laying bare of the doubts, difficulties, and distresses of the mental life which are so often kept in darkness by a fearful patient. Ignorance, timidity, and prudery are the chief causes of the reprehensible shrinking which poisons so many lives; and it is to the doctor as educator that society must look for the removal of these cankers of the soul.

1758 K STREET.

A BLOOD PRESSURE RECORD.

By ABDULLAH K. SALLOM, M. D.,
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With the growing clinical importance of the study of blood pressure in man and its more extensive use the necessity of an ideal method of recording blood pressure observations is becoming felt to a greater extent every day. Indeed without such a system the study of this important subject must needs be greatly retarded and it would probably fail to convey to us the important data which it otherwise would. It is not my desire to dwell on the value of the different methods of recording blood pressure observations for to-day the value of graphic methods is perfectly obvious and needs no comment. Before proceeding, however, it becomes necessary to determine what an ideal chart is. There are a few essential qualifications which an ideal chart must possess: 1. It should be as simple as possible. Easy to comprehend and to keep. 2. It should contain all the data which is of importance in the appreciation of our blood pressure observations. 3. It should show in no indefinite manner the most important phases of blood pressure. 4. Last and though not essential yet desirable, it should be as beautiful and artistic as possible.

To a certain extent a chart possessing all these qualifications cannot to-day be produced inasmuch as the subject is but still in its infancy and we are not able to judge from a proper perspective the various factors which enter into the subject on hand. Nevertheless a chart incorporating as many of the requisites as possible is important and indeed at the present time imperative. To what extent the writer has succeeded in his endeavor he prefers to leave to the reader to decide.

In its actual size the chart measures 7½ by 11 inches, and is based on the unit system of blood pressure reading. (See writer's article Standardization of Blood Pressure, *New York Medical Journal*, Sept. 24, 1910). It gives a latitude of from 10 to 80 units of pressure and covers a period of four weeks taking in two daily observations. Reading from below upward every tenth line is of triple thickness, so that in reading the scale which has been placed on both sides the eye is greatly assisted. From left to right every seventh line is also of triple thickness. If single daily observations are taken then each space represents an interval of one week. If two observations are taken every day then every two such spaces represent an interval of one week. At the same time the chart is so adapted as to record observations taken at any interval equally well.

Above is placed the date and the time for each observation, the importance of which needs no comment. Below the pulse, the respiration, and the number of bowel movements have been placed. Concerning the number of bowel movements I have but little to say. To the careful student who knows and remembers the great influence of the elementary tract on blood pressure I shall make no explanation. I believe it will pass unchallenged.

The data which must be appended to any chart must, of course, necessarily vary with the requirements of the case. In hospitals where a full history of the case is kept, the name, the number, the ward, the circumference of the arm and width of cuff used will perhaps be all that is necessary. It is undoubtedly better, however, to keep a more or less complete record of the case on the chart itself inasmuch as a series of records kept on a scheme of this kind would be of great statistical value.

I believe we can in the very near future place the normal line upon our chart. (See Standardization of Blood Pressure, *New York Medical Journal*, Sept. 24, 1910). Until then a chart with the normal line omitted is undoubtedly best.

I now come to the actual keeping of the chart. It consists solely in the recording of the systolic and diastolic blood pressure by means of two lines. Inasmuch as it stands to reason that the systolic pressure will always be higher than the diastolic the upper line should always represent the systolic; the lower the diastolic. In this manner the physician can at a glance make four readings: Systolic, diastolic, mean, and pulse pressures; midway between the two lines giving the mean pressure while the difference between them shows tolerably well the pulse pressure.

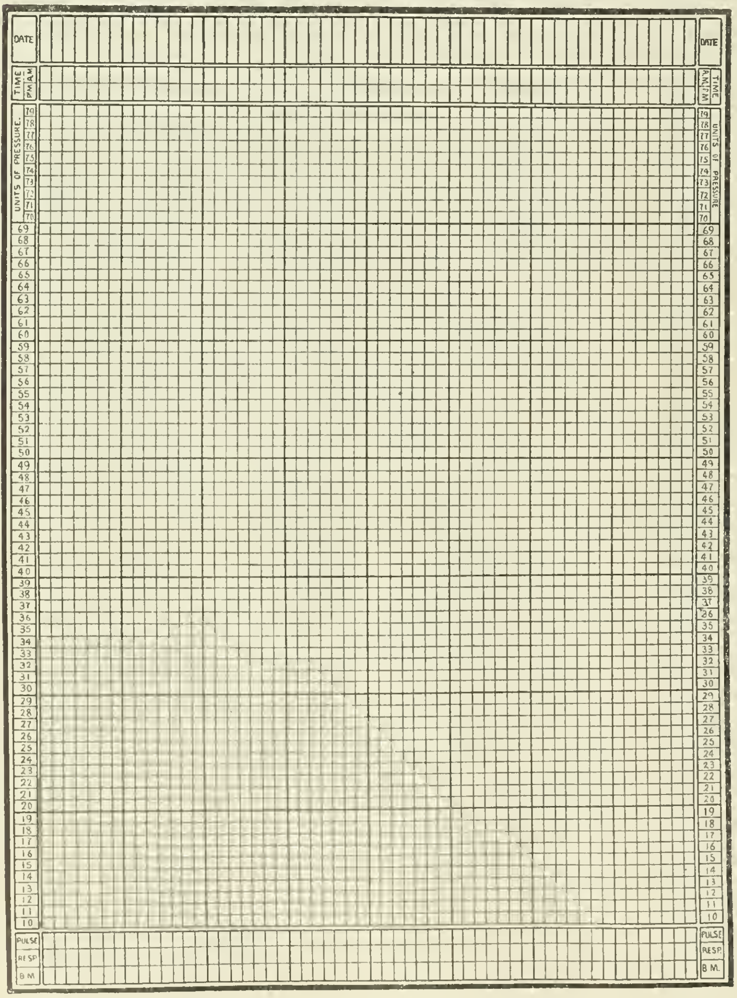
I have found it absolutely disadvantageous to use a third line for the pulse. If such is done it only serves to confuse not to help us. I do not mean to detract from the importance of knowing the rate of the pulse. It furnishes us invaluable data as to the cause of the fall and rise of the blood pressure and the condition of the heart and vasomotor system. We should, however, be cautious lest in our eagerness to demonstrate too much we defeat the very object for which we strive.

With a chart kept along the lines I have now attempted to describe we have a system as simple and convenient as the keeping of our temperature charts of today, and I believe that carrying the work along such lines will furnish us invaluable data and show results undreamed of, even startling to the most enthusiastic.

1625 South Fifteenth Street.

BLOOD PRESSURE RECORD.

Name..............................
Residence..............................
Nativity..............................
Age........Sex........S...M...W...
Color ....Height......Weight....
Occupation..............................
Diagnosis..............................
Complications..............................
Width of cuff used..............................
Circumference of arm..............................
No. ....Date............
Remarks..............................



Blood pressure chart. Actual size, 7½x11 inches.

THE CEREBROSPINAL FLUID IN ACUTE ANTERIOR POLIOMYELITIS.

(*A Preliminary Note.*)*

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Histopathologist.
(*From the Government Hospital for the Insane.*)

The following is a brief résumé of our findings in the cerebrospinal fluid of eleven cases of acute anterior poliomyelitis taken during the recent epidemic in Washington. From the review of many of the most important articles touching upon this phase of the subject it appears that in the early stages of the disease there is frequently found a moderate degree of excessive tension of the fluid and an increase of the protein content and of the cellular elements. At first the percentage of the polymorphonuclear leucocytes is high and later in the disease the lymphocytes are generally in excess. The pleocytosis disappears rapidly so that shortly after the subsidence of fever the spinal fluid may be nearly cell free (Stephens, Flexner, Hochhaus, Netter, Eichelberg, Lucas).

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*Presented before the George Washington University Medical Society, October 15, 1910.

In our studies the following methods were employed: for the globulin content the Noguchi butyric acid was used, the Fuchs-Rosenthal method for quantitative cell estimation, and the Alzheimer method for qualitative study of the cellular elements. The stains used were toluidine blue, Ehrlich triacid mixture, Unna-Pappenheim pyronin methyl green, Giemsa, Romanowsky, hæmatoxylin eosin, and Heidenhain.

In all of our patients the spinal fluid was perfectly clear, the pressure was slightly increased in most of the cases, the protein content was increased, and there was a moderate pleocytosis. In three cases examined during the first stages of the disease there was observed the highest proportion of polymorphonuclear leucocytes (eighteen per cent., fourteen per cent., and 4.5 per cent.). The polymorphonuclear leucocytes disappeared after the fifth or sixth day of the disease through the phagocytic activity of the macrophages, which latter sometimes contained from ten to twenty or more chromatin bodies, probably remains of the nuclei of the polymorphonuclear leucocytes. These chromatin bodies showed histochemical changes (pyroninophile and fuchsinophile reactions) and morphologically resembled the bodies described in certain protozoan disease affecting the nervous system, as, for example, the Leischman-Donovan bodies of kala-azar and the Mott bodies of Jinga trypanosomiasis. In the early cases we also observed a number of altered red blood cells (as the method of fixation used was instantaneous the red blood cells were necessarily altered *intra vitam*). Later in the disease there were observed many lymphocytes (*gelappte* and *geschwänzte* forms), some plasma cells, a few *Körnchenzellen* and macrophages, and occasionally mast cells.

The similarity of the histopathology of the spinal fluid and spinal cord in anterior poliomyelitis to that of some protozoan diseases affecting the nervous system is an argument in favor of the protozoan nature of the virus of poliomyelitis even though some other investigators state that the disease is produced by a small organism. We should mention that no stained bacteria of any kind could be found in the preparations from our cases.

A more complete report of our investigations with illustrations will be published shortly.

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Correspondence.

LETTER FROM EDINBURGH.

Lord Ampthill on Registration of Nurses.—A New Clinical Laboratory at the Edinburgh Royal Infirmary.—Sir Clifford Allbutt on Arterial Diseases.—A Tablet to the late Dr. John Brown.—Scottish Universities and Class Fees.—The Edinburgh Postgraduate Course.—A Tribute to Sir Hector Cameron.—An Honor to Emeritus Professor Ogston.—The Scottish Lunacy Commissioners' Report.

EDINBURGH, *October 17, 1910.*

In distributing prizes to those nurses who had successfully come through the recent examinations at the Edinburgh Royal Infirmary, Lord Ampthill spoke very highly of the work done by nurses and of the moral qualities—courage, fortitude, endurance, and self reliance—required of their profession. Nursing was a noble and inspiring profession, and it seemed to him that it required still further organizing. They needed the protection of the law in the same way that other professions needed that protection. The only way to preserve the honor of any profession was to insure that none but those who were worthy should be able to call themselves of it. In addition, they wished to preserve to themselves the privileges which they had earned by their hard work, self sacrifice, and devotion, and they were anxious that the public should not be misled by those who called themselves fully trained nurses but had not taken the trouble to acquire the qualifications. These things could be secured only by getting the sanction and protection of the law of the land. Lord Ampthill then urged the necessity of registration of nurses. He held that the profession of nursing implied more than merely a good character, it demanded knowledge and efficiency, and he asked them to think over the question of registration and to make up their minds whether they thought it necessary or not. If they left it to others to settle for them, he thought they would be failing in their duty as members of their profession and as associates in a great calling.

Some time ago an anonymous donor gave a sum of money to the Edinburgh Royal Infirmary for the equipment of a clinical medicine laboratory. The managers of that institution placed two rooms at the trustees' disposal, and the laboratory has now been completed and was opened on October 13th by Sir Clifford Allbutt, K. C. B., regius professor of physic in the University of Cambridge. The laboratory is equipped with the most modern appliances for the physical examination of patients, and provision has been made for the addition from time to time of any new apparatus which is likely to prove useful in the study and relief of medical diseases. As laboratories already exist in which chemical and bacteriological investigations can be carried out, the trustees have confined themselves to lines of inquiry which necessitate the actual presence of the patient in the laboratory. Among the pieces of apparatus already supplied is a very sensitive recording galvanometer, which registers the electric currents produced by each beat of the heart. Another instrument, involving similar principles in its construction, is provided for the study of small changes in electric potential in living organs, and its use is expected to help to a clearer appreciation of the changes which occur in them. There are also a number of appliances for the study of blood pressure, some being available for use in the wards, while others require the presence of the patient in the laboratory, and there are also several forms of kymograph for the registration of pulsations and other movements which cannot be studied accurately except by graphic methods. A powerful Röntgen ray apparatus is also a feature of the equipment. The laboratory will be under the charge of the junior assistant physician for the time being and an assistant. Toward the payment of the latter the Carnegie Trust has undertaken to provide £100 a year. The trustees of the new laboratory are Sir Thomas R. Fraser, Dr. G. A. Gibson, and Dr. Harry Rainy.

Sir Clifford Allbutt, in opening the laboratory, gave an interesting address on the training of students and on the value of research. He expressed a hope that the institution of such a laboratory was a step toward the reconciliation of the physician and the pathologist, between whom a sort of feud had existed for the past two thousand years.

The Royal Medical Society of Edinburgh opened its season on November 14th, when an address was delivered to the members by Sir Clifford Allbutt on Blood Pressures and Arterial Diseases. After alluding briefly to the history of the subject he laid stress upon the importance of regarding the cardiovascular system as a whole, and especially of estimating the arterial factor in cardiac function. It was only in recent years that this arterial factor had been directly studied and endeavors made to measure its values. For some time physicians were confused in their conceptions of the subject. For instance, arterial disease was regarded too closely and exclusively in connection with Bright's disease. The speaker then discussed the various instrumental means of exhibiting and recording, first, the character of the movements of the blood in health and in disorder; secondly, the state of the arteries themselves. He then pointed out that the coats of the arteries were liable to injury by changes of the motion in the blood, and particularly by abnormally high pressure of the blood within them. But he insisted that the prevalent opinion that arterial disease was always a consequence of excessive blood pressure was far from the truth. Nor was it true that disease of the arteries necessarily or generally raised blood pressure in any considerable degree. From many obscure causes the arterial coats often became degenerated; and then no doubt the moderate blood pressures of ordinary life would prove to be relatively too much for the weakened walls and would accelerate the destruction. Thus he urged that "arteriosclerosis" was not, as usually it was called, a disease; it was an anatomical result of various diseases, and even in its own anatomy was not uniform, but consisted at least of two kinds. Finally, he described the disease of excessive blood pressure, or plethora of the arteries, a disease of a very insidious kind, but one quite curable if detected betimes. Otherwise it proceeded to injure the arteries and the heart until recovery became impossible. An account of the dietetic and therapeutic measures necessary to counteract this disease concluded the address.

The Edinburgh Pen and Pencil Club, an institution which numbers among its objects the preservation of historically and artistically interesting portions of the city, have cut an inscription on the house at 23 Rutland street, which was once occupied by Dr. John Brown. The inscription runs: "Dr. John Brown, Author of 'Rab and His Friends,' lived in this house from 1850 to 1882."

An interesting series of articles has recently appeared in *The Scotsman* regarding the payment of class fees at the Scottish universities. The matter is treated historically at some length, and the following is a brief extract of the conclusions arrived at by the writer of the articles: In the earliest times the university teacher, apart from any private income he might enjoy, was absolutely dependent upon his class fees. This was indeed necessarily the case where there were no endowments. As regards the Scottish universities, class fees were exacted from time immemorial; speaking generally, they varied in amount according to the faculty in each university and with the social standing of the individual—there was no uniformity. The commissioners of 1826 recommended the establishment of university courts with the power to increase the fees when thought desirable, and suggested that there be uniformity in all the universities. Proceeding upon these recommendations, the act of 1858 created a university court in each university, and transferred to them in express terms the power "to fix and regulate from time to time the fees in the several classes." No alteration was made by the act of 1889, and so the matter still remains. The powers of the 1889 commissioners have expired, and the university courts can make such ordinances as they think fit, with the approval of His Majesty in Council. Lastly, prior to 1889 a substitute in kind was frequently accepted, and in certain cases fees were remitted in whole or in part; and prior to 1910 there has been no necessary uniformity in the four universities of Scotland.

The Edinburgh Postgraduate course has been a decided and an increasing success. In the autumn of 1906 the first course of the series was tried, a course of three weeks. The following year the course was extended to four weeks, divisible into independent fortnights. This was repeated in 1908 with the simultaneous addition of a four weeks' course in surgery, and independent classes in methods of diagnosis were also announced. The course for 1909 was similar, but the independent classes in diagnosis were extended to a month. This year a course in internal medicine has been added. There has been an increased attendance from year to year. This year the full complement of entries for the surgical course was received nearly two months before its commencement, while about sixty entered for the general course and twenty-three for that in internal medicine, attendance to which is limited to twenty-five.

The Glasgow University Court, at a meeting held on October 6th, passed the following minute with reference to the resignation by Sir Hector Cameron of the chair of clinical surgery: "The members of the court, on the resignation of Sir Hector Clare Cameron of the chair of clinical surgery, desire to express to him, as their colleague, their cordial recognition of the distinguished manner in which since 1900 he has fulfilled his duties as a professor of the university. By his skill as a surgeon and his power as an exponent of surgical principles he has increased the reputation of Glasgow as a centre of medical science and professional training. The court has also had the advantage, during various periods of office from 1889 onward, of his cooperation in the government of the university, and it values highly the share he has taken and still takes in its deliberations. His colleagues have no doubt that, though freed from the educational responsibilities of his chair, he will continue to further the cause of surgical science and to enforce and apply the beneficent teachings of his illustrious master and friend, Lord Lister."

In the picture gallery of Marischal College, Aberdeen, on October 14th, portraits of Emeritus

Professor Ogston, subscribed for by medical graduates all over the world, were presented, one to the university and the other to himself. The presentations were made by the Right Hon. Robert Farquharson, who alluded to the scientific work done by Professor Ogston, and hoped that their friend did not intend to give up work altogether. Professor Matthew Hay, who in the absence of the principal accepted the portrait on behalf of the university, said that they who were members of the staff of the university frankly admitted there was no one among them who had done more to increase its educational efficiency and to advance its reputation throughout the world than their former colleague. No surgeon that he knew of in this country, except Lord Lister, laid more deeply and more surely the scientific foundations for his surgical practice; and, indeed, Lord Lister owed not a little of the ready acceptance of his great revolution in surgical treatment to the penetrating and illuminating researches of Professor Ogston. Professor Ogston, in reply, said they had given him a position in the pantheon of their university which, however little he might deserve, he most deeply appreciated. In the personal gift, as it might be termed, the professor was represented in the household uniform as a surgeon in ordinary to the King in Scotland and the robe of M.D. The university portrait depicted him in ordinary attire. The portraits were the work of the well known portrait painter, Mr. George Fiddes Watt, A.R.S.A.

The Report of the Scottish Lunacy Commissioners, recently issued, affords some interesting reading. After giving a large number of statistics, the commissioners conclude (1) that the number of patients on the register has increased in the past five years, but that the increase is greatly below that shown by any quinquenniad during the past twenty-five years; (2) that the occurrence of insanity as shown by admissions to the register in proportion to population shows a marked decrease throughout the past five years; (3) that this decrease is confined to no particular part of the country, but is manifested throughout the country, and irrespective of whether the population of a district is rising or falling; (4) that the number of patients removed from the register by discharge as recovered or unrecovered has been falling continuously during the past thirty years; (5) that the removals from the register by death have risen to some extent, especially during the past ten years; (6) that the increased number of patients found on the register during the past five years is due solely to accumulation caused by a continuous fall in the number of patients discharged to an extent which has outbalanced the effects of a lowered admission rate and a higher death rate.

LETTER FROM OTTAWA.

A Dominion Public Health Conference.—Infant Mortality in Ontario.—Changes in the Ontario Provincial Hospital Service.—The Journal of the Canadian Medical Association.

OTTAWA, *October 21, 1910.*

Under the auspices of the Canadian Conservation Commission there was held in Ottawa from the 12th to the 15th of October a conference of federal and provincial departments of public health to consider general questions of provincial and federal cooperation on health protection measures. One of the leading addresses was that of Dr. Charles A. Hodgetts, which has since been printed in pamphlet form, on Pure Water and the Pollution of Waterways. Dr. Hodgetts is medical adviser to the public health branch of the commission. In his paper he advocated strongly the creation of a Canadian Department of Public Health to cooperate with the provincial boards of health. Referring to the subject of typhoid fever, Dr. Hodgetts said that a death rate of over 20 per 100,000 of the population was an indication that the public water supply was greatly at fault. He presented a table of mortality statistics of leading cities of Canada, giving figures for the years from 1900 to 1909 inclusive. From this table it is seen that Winnipeg had a rate of 38.4 for 1909; Toronto, 25.7; Montreal 53.8. The highest given rate in 1909 was that of Fort William, 94, while the highest rate recorded in any year was also that of Fort William, which gave in 1906 a rate of 946.9. The meeting took up and discussed the question of tuberculosis and recommended that the federal government be urged to give substantial aid to encourage the establishment of new sanatoria and hospitals for consumptives. It was urged also that the Conservation Commission take immediate steps to secure areas of Crown lands in localities recognized as being climatically favorable for the cure of tuberculosis. These are to be set apart for colonies of tuberculous persons and their families. The commission will ask the Dominion government for a large grant every year to be expended for the suppression of tuberculosis. The committee on a central laboratory will seek for a permanent National Council of Health under the Commission on Conservation and also a national public health laboratory. The proposition, so far as the Council of Health is concerned, is that it be composed of an officer representing each branch of a federal department engaged in public health work and a representative from the public health service of each province. It is proposed that the national laboratory shall manufacture vaccines and antitoxines and all analogous products and also supervise the manufacture, sale, and importation of the same. An officer is to be sent to study and report upon the work and expenses of the laboratories in the United States.

The Ontario government has recently issued a special report on infant mortality in the province. This report was prepared by Dr. Helen MacMurchy, of Toronto, who sets forth that the prevention of infant mortality is the greatest problem of preventive medicine. Infant mortality is 29 per cent. of the total death rate of Ontario, while that of tuberculosis is about 8 per cent. In the largest city in the province, Toronto, the infant mortality is about one fifth of the total deaths. The report is largely a comparison with conditions in other countries and suggestions to lessen infant mortality by educational methods.

Dr. W. C. Herriman, assistant superintendent of the Toronto Provincial Hospital for the Insane, is transferred to Orillia, to succeed Dr. Beaton. Dr. MacCallum, of Penetang, has retired from the service and has been succeeded by Superintendent Wilson, of Coburg. Dr. Moher, of the Brockville Hospital, succeeds Dr. Wilson at Coburg. Dr. J. M. Forster, the oldest of the assistants in the service, is transferred from London to the superintendency of the Brockville institution. Dr. Rollins, of the Orillia institution, has been appointed assistant superintendent at Mimico, and Dr. Harvey Clare, of Mimico, takes Dr. Herriman's position in Toronto.

It is announced from Montreal, which is now the headquarters of the Canadian Medical Association, that the association has made arrangements with a publishing house in Toronto for printing the official journal of the association. Dr. Andrew Macphail, of Montreal, will be the editor, and on the appearance of the new journal the *Montreal Medical Journal* will cease publication. Work is proceeding on the first issue, which it is expected will be issued before the end of the present year.

Therapeutical Notes.

Banana Flour as a Food for Infants.—At this year's meeting of the British Medical Association in the section in pædiatrics Dr. Eric Pritchard presented a paper bearing the foregoing title which was published in the *British Medical Journal* for October 15, 1910. For many years past he has recommended the addition of mashed banana to the milk mixtures of artificially fed infants, as he has found its antiscorbutic properties of value in the maintenance of nutrition. More recently he has been making experiments with banana meal made into a gruel or decoction as a substitute for the more expensive proprietary infant foods. The results so far have proved quite satisfactory. The chief objections to proprietary foods are, first, that they are expensive, and secondly, that they are either employed as substitutes for cow's milk, or added in too large quantities. It is of great importance that infants should be taught early to digest cow's milk; artificial substitutes for cow's milk do not achieve that end, for they are mostly predigested. The digestion of cow's milk is undoubtedly made easier for the infant by the addition of cereal decoctions and solution of gum or gelatin. The recent studies of Alexander and Bullowa (Protective Action of Colloids in Milk, *Archives of Pediatrics*, January, 1910) on the protective action of colloids in milk have afforded a scientific explanation of the empirical experience that gum, gelatin, or cereal gruels, added to milk, facilitate the digestion of casein.

It is, however, of importance, if cereal gruels are employed for this purpose, that they should not be given in excessive quantities before the infant has developed its power of diastatic digestion. Very thin gruels should be employed at first, and their strength progressively increased; if this precaution is taken the cereal gruel serves the double purpose of promoting the digestion by casein and of developing the infant's power of diastatic digestion. As cereal gruels the author has employed barley water, bread jelly, oatmeal jelly, and barley jelly; all these are excellent in their way, but the time and trouble required to prepare them properly deters many a poor mother from using these particular diluents. A decoction of banana gruel can be made more expeditiously owing to the solubility of the major portion of the carbohydrate elements. A satisfactory gruel can be made in a few minutes by rubbing up a heaped tablespoonful (1 oz.) of banana flour with twenty ounces of water, and then boiling for five minutes. A gruel made in this way has excellent colloidal properties when added to milk in equal quantity; it thickens the milk, and prevents formation of a leathery coagulum of casein, and satisfies the appetite of hungry infants more effectually than simple milk dilutions. The decoction made in this way has not an attractive appearance, for it is of a light chocolate color, owing to the presence of a pigment which tenaciously adheres to the starch molecules, and which cannot be bleached by ordinary bleaching reagents. It has been urged against bananas and banana flour that the contained fibre has an injurious influence on the delicate mucous membrane of the infant's intestine. The author says that his personal experience does not support this view. He prefers the crude flour to the more highly refined preparations which are sold under fancy names as banana meal freed from all fibre.

Dr. Pritchard says in conclusion that with the exception of the lower proteid content, banana meal compares favorably as a food with most cereal flours. Although occasionally used in the West Indies as an exclusive food for infants, it is obviously highly unsuited to this purpose, but in the form of a decoction it is an excellent diluent of cow's milk.

Impetigo Contagiosa Invading the Mucous Membranes. — Montgomery draws attention in the *Journal of Cutaneous Diseases* for September, 1910, to an invasion of the mucous membranes by the virus of impetigo contagiosa and suggests treatment. His patient was afflicted with a scattered crusted eruption of the face and neck. Both nostrils were intensely red, crusted and discharging an acrid serum. Conjunctivitis of the right eye was also present. For the face and nostrils an ointment was ordered of the following composition:

℞ White precipitate ointment, ...ʒiv;
Zinc ointment, ...℥i.
M.

Compresses of a hot saturated solution of boric acid were directed to be used on the eye, also in the nostrils. The outer surface of the eyelid did not improve under this treatment and a paste of the following ingredients was applied:

℞ Starch, ...ʒi;
Zinc oxide, ...ʒi;
Naftalan, ...ʒii.
M. et Sig.: Use at night and wipe off with olive oil in the morning.

Under the application of this powder and the dusting of calomel in the eye three times a day the condition of the patient was improved.

The Treatment of Cholelithiasis.—Chase (*Boston Medical and Surgical Journal*, October 27, 1910) says he knows nothing better among the medicinal agents used for the treatment of faulty gallbladder conditions than the following combination recommended by Billings:

℞ Sodium salicylate, ...gr. xv;
Sodium phosphate, ...gr. xxx;
Dried sodium sulphate, ...ʒiss.
M. et Sig.: One half to one drachm in glass of hot water thirty minutes before meals.

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THE REPORT OF THE SURGEON GENERAL OF THE ARMY.

Surgeon General Torney's report for the fiscal year ending June 30, 1910, has just been published in the form of a brochure of 223 pages. As regards the health and sanitary conditions of the army, it covers only the calendar year 1909. It deals with many topics connected with the administration of the affairs of the Medical Department (the Army Medical Corps and the Army Medical Reserve Corps), but for purposes of comment we must confine ourselves to a few of them.

One of the most vexatious problems which the department has to handle is that of the attempted control of venereal diseases in the army. On this matter the report is discouraging. The surgeon general remarks that the slight diminution in the incidence of such diseases in the preceding year had raised the hope that the "campaign of education" on this subject which had been begun by the medical officers was beginning to bear fruit, but the year 1909 showed an increase, not only over the year before, but over every other year of which there is record, except 1905. "Disheartening as is this record," says the report, "it is, if one may accept the opinions of high medical authorities, exceeded by the prevalence of these diseases in civil life, and it will be very difficult to make any substantial improvement in the record of the army in this respect until the State and municipal authorities are aroused to the necessity of taking serious sanitary measures to restrict their ravages."

The surgeon general vigorously advocates the general adoption in the army of specific measures calculated to restrain the men from illicit sexual intercourse and to save them from the consequences of such indulgence as they cannot be induced to forego. Among the former expedients would be the reestablishment of the canteen and the formation of temperance societies, for the connection between dram drinking and recourse to the haunts of harlots is indisputable. Among the latter there would figure such use of prophylactics as has already achieved notable results in the navy.

The year witnessed the completion of experiments made in the Philippines to test the efficiency of orange red underclothing as a means of protection against the supposed direct deleterious action of the sun's heat and light rays. The conclusion was reached that there was no evidence that the solar rays alone could or did produce the harmful effects, and no benefit appeared to result from wearing the orange red garments. "On the contrary, the test underclothing added materially to the burden of heat which the system was compelled to endure and which is probably the chief cause of tropical deterioration."

DOSES AND THE PHARMACOPŒIAS.

A number of weeks ago, in its issue for August 20th, the *Lancet* commented with its usual sagacity on the matter of the insertion of statements of doses in the pharmacopœias, being moved to do so by the reflection that the pharmacopœias of Great Britain and the United States were now in process of revision. It remarks that it has been customary to give both minimum and maximum doses, "a convenient mode of expression which does not appear to have any disadvantages," but that the pharmacopœia of the United States gives only the average doses.

Our contemporary cites with approval Dr. Clement B. Lowe's suggestion at the recent annual meeting of the American Pharmaceutical Association to the effect that the only greatest benefit would result from stating not only the minimum and maximum individual doses, but also the maximum amounts proper to be given in twenty-four hours, as is now done in a number of European pharmacopœias. In fact, we may add, the word dose very generally means in France the amount to be given in twenty-four hours, the word *prise* being applied to the individual dose, a signification which has sometimes led to misunderstanding on the part of English speaking readers of French books.

The *Lancet* thinks it is questionable if more than two maximum doses of such a drug as digitalis, which is eliminated slowly, should be given in the course of twenty-four hours. Further examples of such drugs are potassium bromide and strychnine, and there are many others among the powerful agents in common use. On the other hand, drugs that are eliminated very quickly may be given in frequent doses with safety. For instance, hydrocyanic acid is eliminated so rapidly that there would be but little danger in taking a maximum dose every hour, and for the same reason belladonna rarely gives rise to fatal poisoning.

In consequence of this variability in the rapidity of elimination, our contemporary thinks that the statement of maximum daily amounts of powerful drugs in a pharmacopœia affords an additional safeguard against the administration of a dangerous amount. Again Dr. Lowe is cited in connection with acetanilide, the average dose of which is given in the *United States Pharmacopœia* as four grains, although the frequent repetition of such a dose would be distinctly dangerous, and it is recalled that when the drug first came into use as an antipyretic two doses of five grains each, given some hours apart, produced cyanosis.

In regard to the objection that the inclusion of sufficient information concerning doses in a pharmacopœia would inflate the book unduly, the *Lancet* thinks it should not be allowed to weigh against the heightened usefulness that would result. This is a view which commends itself to us also. It was a long time before our pharmacopœia took any cognizance of doses, but, now that it has undertaken to give information upon the subject, it seems to us that considerable space might be devoted to making the information thorough, especially as the book is coming to be quite generally regarded as authoritative.

CULTIVATION OF ADULT TISSUES AND ORGANS OUTSIDE THE BODY.

The viability of the cells of the body independently of the life of the organism of which they are a part has, of course, long been recognized, and the fact of the separate existence of myriads of living units, working together in that marvelous cooperative community, the body, constitutes one of the most mysterious phases of the eternal riddle of life itself. Familiar evidences of this fact are found in observations of the amœboid movements of the leucocytes after the blood is removed from the body for examination, in the continued physiological action of excised organs under suitable conditions, such as the rhythmic contractions of the heart when perfused with Ringer's solution, etc. It has remained, however, for Alexis Carrel and Montrose T. Burrows, of the Rockefeller Institute for Medical Research (*Journal of the American Medical Association,* October 15th), to accomplish the astonishing feat of cultivating adult tissues and fragments of organs in suitable media, so that their growth could not only be watched by means of the microscope, but could even be detected by the naked eye.

Carrel and Burrows's work was suggested by the successful experiment of Harrison of cultivating the embryonic nerve tissue of the frog and the later cultivation by Burrows of embryonal tissue of warm blooded animals. The medium used consisted of plasmatic fluid taken from the same animal from which the tissue was derived, and the preparations were sealed in hollow glass slides and kept in an incubator at a uniform temperature. Tissues successfully cultivated were the arterial sheath, connective tissue, peritoneal endothelium, bone, epidermis, thyreoid, spleen, kidney, etc., of the adult dog, cat, and frog. There was a distinct tendency toward a reproduction of the tissues inoculated, as, for instance, in the case of the kidney, in which new tubules were formed and pushed out into the surrounding medium. Furthermore, in several instances a subculture was successfully grown, the developing tissue being transplanted from one preparation to another. The authors state that apparently normal cells may be cultivated with no more difficulty than many microbes. The enormous value of this discovery in the field of pathological physiology is obvious. For instance, as Carrel and Burrows suggest, microorganisms can be cultivated in conjunction with living tissue cells, and their interactions studied, and the method will without doubt contribute much to our study of new growths. They have already succeeded in inoculating plasmatic fluid with sarcoma of the fowl. It seems not unreasonable to prophesy that this discovery will mark an epoch in the history of biological investigation.

ACUTE ANTERIOR POLIOMYELITIS.

Just as physicians were congratulating themselves upon the decadence of the ravages of cerebrospinal meningitis in this country they were confronted by an enormous increase in acute anterior poliomyelitis. Up to 1907 the disease had prevailed sporadically in the Atlantic coast States for about twenty years. Each year since then has seen a very marked spread of it in epidemic form. It has traveled across the vast area of this country, and during the summer just passed it has appeared from the Atlantic to the Pacific and from the Gulf to Vancouver. From official and nonofficial advices it is safe to say that in the several epidemics in the United States alone during the summer of 1910 there have been over 20,000 cases. Although the mortality is comparatively low, seldom exceeding ten per cent., at least seventy-five per cent. of the little victims are more or less crippled for life. The paralyses, deformities, and atrophy of the affected extremities are often so fearful as to be scarcely less dreaded than death itself.

Those of us who have had to deal with this malady or who have studied its unchecked progress have come to realize how helpless we are. We know it to be epidemic. We believe it to be contagious or at least highly communicable. We have learned that there are abortive forms without paralysis. Its age incidence and seasonal occurrence are known to us. We are acquainted with its terrible results. But until now we have not known the nature of the infecting agent, how it is transmitted, or by what channels it gains entrance to the body. We cannot certainly recognize the abortive forms unless they occur in the course of an epidemic. We have not learned how to check its spread and have no definite basis for prophylaxis. When it appears we are quite helpless to ward off its results and are generally unsuccessful in our efforts to counteract them when severe.

For help and enlightenment we turn to the laboratories, and when, therefore, Dr. Simon Flexner, of the Rockefeller Institute, addressed the Medical Society of the County of New York a few evenings ago on The Relation of Experimental to Human Poliomyelitis, his words fell upon attentive ears.

Dr. Flexner has taken up a single problem of the disease at a time and solved it before advancing to another. First he proved its infective nature by reproducing the disease in monkeys by subdural and intracerebral injections of macerated portions of spinal cords removed from human beings who had died of it. He has been able to pass the virus through many generations in monkeys, using material from one generation to infect the succeeding. By this means he proved that the virus lived and multiplied. He found that by using the central nervous system as a source of the virus and the same system as a site of inoculation he could get nearly one hundred per cent. of infections. He then found that other parts of the body contained the virus, most particularly the nasopharyngeal mucous membrane. He also succeeded in infecting monkeys through channels other than the central nervous system, as by subcutaneous and intraperitoneal injections and by merely rubbing the virus into the nasal mucosa. He next sought the nature of the virus. He ground up infected spinal cords with quartz and passed them through a Berkefeld filter. The resulting bacterium free filtrate was virulent for monkeys, and material from these animals was in turn capable of producing the disease in yet others. Glycerinization of the macerated material did not destroy the virus, though all forms of bacteria succumb to this treatment. Exposure to a temperature of minus 4° C. and complete desiccation without heat also do not destroy the virulence of the infected material. Attempts at cultivation yielded cloudiness in blood and ascitic bouillon media. All efforts to discover the infectious agent microscopically were fruitless, although it can be as easily handled and controlled as ordinary bacteria. Inasmuch as no one has as yet succeeded in seeing it and as it is filterable through substances impervious to bacteria, it is thought to be too minute to intercept those rays of light visible to the human eye. Possibly by means of ultra violet rays it may be photographed and the photographic impressions subsequently enlarged so that it may be visible.

Dr. Flexner kept infected and dying monkeys in the same cage with healthy ones for long periods of time without a single case of spontaneous development of the disease arising. This is the experience of all other experimenters in this field and may be explained rather by the extreme insusceptibility of these animals to the disease than by considering it as an indication that the malady is not directly transmissible through contact alone.

Having learned the nature of the virus, its sites of occurrence, its resistance, and the ease and certainty of experimental transmission, Dr. Flexner next looked to the question of possible artificial immunity. It was apparent that one attack conferred immunity in monkeys, for efforts at reinfection were unsuccessful. Up to the present time he has experimented with the virus killed by heat as a means of counteracting the effects of experimental inoculation, but has failed to get the desired results.

Dr. Flexner concluded his remarks by saying that, while much had been learned about the nature of the specific agent of infection in acute poliomyelitis, there was still so little known about its means of transmission in man that all possible measures of isolation should be adopted both in sporadic cases and in epidemics. Also he urged the necessity for making it a reportable disease by the boards of health of the larger cities, as has already been done by many smaller towns. He cannot as yet offer the practitioner or the patient any means of ameliorating the results of the disease or of preventing its development, but we hope that his further endeavors may be crowned with success.

News Items.

Changes of Address.—Dr. J. Hilton Waterman, to 205 West Fifty-seventh Street, New York.

Dr. Edward L. Kellogg, to 48 West Fifty-first Street, New York.

Dr. James Morgan, to 101 West Eightieth Street, New York.

Dr. F. K. MacMurrough, of Jersey City, to One Hundred and Forty-fifth Street and St. Nicholas Avenue, New York.

Dr. Saling Simon, to Rooms 354, 356, and 358 Metropolitan Building, Sixteenth and Court Place, Denver, Colo.

Dr. Charlotte Blum, to 203 East Tenth Street, New York.

The Nobel Prize in Medicine for 1910 has been awarded to Dr Albrecht Kossel, professor of physiology in the University of Heidelberg.

The Jesup Lectures of Columbia University will be delivered this year by Dr. Frederic S. Lee. His subject will be the Scientific Features of Modern Medicine.

The Birth Rate of France.—It is stated that during the first half of the year 1910 the births in France exceeded the deaths by 21,189. During the year 1909 the deaths exceeded the births by 28,205.

The Second Harvey Society Lecture Postponed.—Owing to a death in the family of Professor W. E. Castle, of Harvard University, the second lecture in the Harvey Society course will not be delivered on Saturday evening, November 5th, as previously announced. Notice of the postponed lecture will be given later.

The Thurber Medical Association.—This association, which was incorporated in Massachusetts in 1859, held its annual banquet in Milford, on Thursday evening, October 13th. Dr. A. J. Gallison, of Franklin, was toastmaster, and Dr. J. F. Jenckes, of Wrentham, was the principal speaker, his subject being The Point of View.

The Alumni Association of the Lying-in Hospital, of New York, will hold their next meeting at the Harvard Club, 27 West Forty-fourth Street, on Wednesday, November 9th, at 8:30 p. m. Dr. J. Whitridge Williams, of Johns Hopkins University, will read a paper entitled My Experience in the Treatment of Labor Complicated by Contracted Pelvis.

The Fenger-Senn Memorial Lecture.—The Council of the Chicago Medical Society, on the evening of October 8th, paid a high tribute to the combined names of Fenger and Senn by instituting the Fenger-Senn Memorial Lecture, to be given annually under the auspices of the Chicago Medical Society, the sum of $200 to be paid for it by the board of trustees.

The Clinical Society of the New York Throat, Nose, and Lung Hospital will hold a stated meeting on Monday evening, November 7th, at 8:15 o'clock. This will be a dental meeting, the subjects to be discussed being of interest to both physicians and dentists. Among those who will read papers and take part in the discussions are M. I. Schamberg, M. D., D. D. S., R. W. Waddell, D. D. S., G. A. Wilson, Jr, D. D. S., and W. D. Tracy, D. D. S.

A New Building for the Williamsburgh Hospital, Brooklyn.—Plans have been filed for a new six story building for the Williamsburgh Hospital, to cost approximately $200,000. The building material will be brick and stone, and the new hospital will be fitted up with all modern appliances. The new structure will be erected on the present site of the hospital, and will be put up in sections, so as not to interfere with the regular work of the institution.

The College of Physicians of Philadelphia held a special meeting on Friday, October 14th. The evening was devoted to a discussion of poliomyelitis. Dr. Paul A. Lewis, of the Rockefeller Institute, read a paper on Recent Studies in the Ætiology of Acute Poliomyelitis. Dr. Allen J. Smith read a paper on the Lesions of Acute Poliomyelitis. Special features in the symptomatology and treatment of acute poliomyelitis, with reference to its probable pathogenesis, were next considered, among those taking part in the discussion being Dr. Charles K. Mills, Dr. B. Franklin Royer, Dr. F. X. Dercum, Dr. J. P. Crozer Griffith, Dr. Hobart Amory Hare, Dr. John K. Mitchell, Dr. John B. Roberts, Dr. William G. Spiller, Dr. Henry W. Cattell, Dr. Alfred Gordon, and Dr. David Reisman.

Appointments at the Rockefeller Institute.—The following appointments have been made to the staff of the Rockefeller Institute for Medical Research; Francis Henry McCrudden, M. D., chemist to the hospital; Thomas S. Githens, M. D., Fellow in the department of physiology and pharmacology; James B. Murphy, M. D., Fellow in the department of pathology and bacteriology; A. R. Dochez, M. D., bacteriologist to the hospital; F. Medigreceanu, M. D., laboratory assistant to the hospital; W. H. Manwaring, M. D., assistant in pathology.

The American Society of Sanitary and Moral Prophylaxis.—A regular meeting of this society will be held at the New York Academy of Medicine on Thursday evening, November 10th, at 8:30 p. m. The subject selected for discussion is The Sanitary Supervision of Prostitutes and Clause 79 of the Page bill. The discussion will be opened by the Hon. Julius M. Mayer, counsel for the Page bill, and will be participated in by a number of distinguished representatives of the medical profession and the laity.

Free Tuberculosis Clinics Opened in Philadelphia.—Free clinics for the study and treatment of tuberculosis were opened on October 26th by the Jewish Consumptive Institute, at its dispensary, 406 Wharton Street, Philadelphia. Eggs, milk, and medicine are given free to the patient, and sanatorium treatment is furnished free where necessary. Dr. Solomon Solis Cohen is consulting medical director of the clinic, Dr. Max Staller is medical director, and on the visiting staff are fourteen well known Philadelphia physicians.

Typhoid Fever in New York State.—A report on the typhoid conditions in New York State was submitted last week to Governor White, at his request, by the State Commissioner of Health, Dr. Porter. This report shows that, contrary to the general opinion, the mortality from typhoid fever in the State during 1910 is below the average for the past ten years, and for the last three months for which statistics are available, that is, July, August, and September, the mortality is approximately ten per cent. less than normal for this period for the past ten years.

Human Embryos Wanted by the Cornell University Medical College.—The department of embryology of Cornell Medical College is very anxious to obtain human embryos of various sizes or ages for the purpose of study. Any physician who may get such material will confer a favor by notifying Dr. C. R. Stockard, of Cornell Medical College, either by card of by 'phone (number 267 Madison), and the embryo will be sent for at once. If the material is fresh it may best be wrapped in a dry cloth until reached, or, if it is not convenient to give prompt notice, the embryo may be placed in ten per cent. formalin.

The Boston Hospital School to be Continued.—So many protests were made by physicians and the Boston Association for the Relief and Control of Tuberculosis against the closing of the Boston Hospital School in Franklin Park that a conference was held between the mayor, the board of trustees of the Boston Consumptives' Hospital, the Boston School Board and the Boston Board of Health to consider the question. As a result of this conference, it is announced that the Hospital School will be continued for the present. It was also recommended that in every school building erected hereafter in the city an open air room be provided for tuberculous children.

A Testimonial Dinner to Dr. J. M. Bodine.—For forty-five years Dr. James Morrison Bodine, as dean and president of the faculty, has presided over the destinies of the University of Louisville Medical Department. Now entering his eightieth year he continues to devote his energies to the cause of medical education. His many friends and pupils scattered throughout the country have deemed this an appropriate occasion to show their appreciation of his devotion and their affection for him personally. To this end it has been decided to give him a testimonial dinner on the 16th of December, 1910, at the Seelbach Hotel in Louisville. Those friends whom the committee has been unable to reach by invitation are cordially invited to attend and are requested to signify such intention at once by writing to the chairman of the committee. Signed: Lewis S. McMurtry, J. M. Matthews, Ap Morgan Vance, J. M. Ray, Thomas L. Butler, I. N. Bloom, chariman.

A New Tuberculosis Directory will soon be issued by the National Association for the Study and Prevention of Tuberculosis. This directory will contain a complete list of all hospitals, sanatoria, dispensaries, and associations in the United States which are engaged in the war against tuberculosis, and will also include a summary of what has been done by the various State legislatures and county and municipal governing bodies in the crusade. The first directory was issued in 1904, and the second in 1908. The new directory will show that the increase in the number of agencies fighting consumption aggregates nearly five hundred per cent.

Public Lectures on Tuberculosis.—The Board of Education of New York has arranged a series of special lectures on the dangers of tuberculosis and ways and means of preventing its spread, to be delivered in various parts of the city during the coming winter. These lectures are free to the public. The series began on Tuesday evening, November 1st, when Dr. Thomas Darlington, former Commissioner of Health, gave a talk in Public School No. 4, at Rivington and Ridge Streets. On Friday evening, November 4th, Dr Herman Lorber, of the tuberculosis bureau of the Health Department, spoke in Public School No. 26, Linoleumville, S. I. On Thursday evening, November 10th, in Public School No. 27, St. Ann's Avenue and 146th Street, Dr. John Bessner Huber will deliver an address, and Dr. James Alexander Miller will speak in Public School No. 8, Mosholu Parkway, Bedford Park, on November 11th. Other lectures of the series will be delivered by Dr. S. Adolphus Knopf, Dr. Louis H. Klein, and Dr. John H. Huddleston.

The Section in Pædiatrics of the New York Academy of Medicine will hold a joint meeting with the Pædiatric Society of Philadelphia, in Philadelphia, on Tuesday, November 8th. The programme will include the following papers: The Symptoms, Management, and Treatment of Nasal Diphtheria, by Dr. E. E. Graham; Some Anatomical Features of the Child's Thorax and their Practical Application in Physical Diagnosis, by Dr. George Fetterolf and Dr. J. C. Gittings; Frequency and Significance of Albumin in the Urine of Normal Children, by Dr. K. D. Blackfan and Dr. S. McC. Hamill; Report of a Case of Rabies with Autopsy and Complete Pathological Findings, by Dr. Alfred Hand, Jr., Dr. C. Y. White, and Dr. John Reichel. The discussion of these papers will be limited to members of the Section in Pædiatrics of the New York Academy of Medicine. At the close of the meeting there will be an informal smoker. Physicians from New York who wish to remain in Philadelphia over night will be entertained by the members of the Philadelphia society.

Army Medical Corps Examinations.—The Surgeon General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1911 will be held on January 16, 1911, at points to be hereafter designated. Full information concerning the examination can be procured upon application to the Surgeon General, U. S. Army, Washington, D. C. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible. The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School. In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before January 3, 1911. Early attention is therefore enjoined upon all intending applicants. There are at present seventy-six vacancies in the Medical Corps of the Army.

Lectures on Public Health Problems.—The fourth lecture in the course on public health problems and the prevention of disease, which is being given on Monday afternoons at Teachers College, Columbia University, was delivered by George Y. Soper, Ph. D., of the Metropolitan Sewerage Commission, his subject being The Collection and Disposal of Municipal Waste. The next three lectures will be on the question of transmissible diseases, as follows: November 7th: Communicable Diseases, Diphtheria, Typhoid Fever, Scarlet Fever, etc.,—their Transmission, by Dr. William Hallock Park, director of the research laboratories of the New York City Health Department; November 14th: Communicable Diseases—their Prevention, by Dr. Park; November 21st: Some Examples of the Control of Infectious Diseases, by Dr. Simon Flexner, director of the Rockefeller Institute. These lectures are given in the Horace Mann Auditorium of the college, at five o'clock in the afternoon, and are free to the public.

Founder of the Red Cross Society Dead.—Henri Durant, founder of the International Red Cross Society, died in Heiden, Switzerland, on Sunday, October 30th, aged eighty-two years. He was born in Switzerland and lived nearly all his life in Geneva. While taking part in the battle of Solferino, Italy, June 24, 1859, his attention was called to the needless suffering and loss of life resulting from neglect to care for the wounded. With a view to remedying this evil Mr. Durant conceived the idea of pledging the nations of the earth to protect as neutral all sick and wounded combatants and all persons giving them succor. Through the cooperation of the Swiss Federal Council an international conference was held at Geneva in October, 1863, at which sixteen Governments were represented. This was followed by the Geneva Convention on August 8, 1864, which adopted nine articles of agreement "for the amelioration of the condition of the wounded in armies in the field." These articles were signed by twelve Governments, and the signatory powers have since reached forty. Clara Barton was the first president of the American Red Cross, of which the executive head is now President Taft. Mr. Durant spent his fortune on Red Cross organizations but the award to him of one of the Nobel prizes enabled him to spend his old age in comfort.

The American Association for the Study and Prevention of Infant Mortality will hold its first annual meeting in Baltimore on Wednesday, Thursday, and Friday, November 9th, 10th, and 11th. The opening session will be held in McCoy Hall, Johns Hopkins University, on Wednesday evening, with Dr. J. H. Mason Knox, Jr., of Baltimore, president of the association, in the chair. Dr. Knox will deliver an address on the duty of a nation to its potential citizens. Other speakers will be His Excellency M. Jusserand, Ambassador from France to the United States, Professor Irving Fisher, of New Haven, Conn., Dr. Abraham Jacobi, of New York, and Dr. William H. Welch, of Baltimore. The exhibition, which is to be held in connection with the meeting, will then be formally opened. The chairman of the committee is Dr. Marshall L. Price, secretary of the Maryland State Board of Health, and the medical officer in charge of the exhibition is Dr. J. W. Schereschewsky, of the United States Public Health and Marine Hospital Service. The object of the exhibition is to show in concrete form all the known factors which cause a high infant death rate, with simple and logical means of prevention. Following the opening of the exhibition an informal reception to the members of the association will be held. The second session, to be held on Thursday morning, will be devoted to a discussion of the philanthropic prevention of infant mortality. At the third session, to be held on Thursday evening, the Municipal, State, and Federal prevention of infant mortality will be considered, and the fourth and fifth sessions will be devoted to a discussion of the subject from the medical and educational standpoints. In response to the wishes of several members, it has been planned to have a round table on Friday evening, for the informal discussion of biological aims and methods in education. The officers of the association are: President, Dr. J. H. Mason Knox, Jr., of Baltimore; president-elect, Professor Charles Richmond Henderson, of Chicago; vice-presidents, Professor C. E. A. Winslow, and Mr. Homer Folks, of New York; secretary, Dr. Linnaeus E. La Fetra, of New York; executive secretary, Miss Gertrude B. Knipp, of Baltimore; treasurer, Mr. Austin McLanahan, of Baltimore.

Conference of Sanitary Officers.—The tenth annual conference of the sanitary officers of the State of New York will be held in the Y. M. C. A. Auditorium, Buffalo, on Wednesday, Thursday, and Friday, November 16th, 17th, and 18th, under the auspices of the New York State Department of Health. A cordial invitation is extended to the medical profession to attend the meeting for which a splendid programme has been arranged. On Friday both the morning and afternoon sessions will be devoted to the question of communicable diseases. A round trip rate of a fare and three-fifths on the certificate plan from points in New York State has been secured for persons attending the conference. The headquarters of the conference will be the Hotel Iroquois.

The Health of Philadelphia.—During the week ending October 1, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Malarial fever, 2 cases, 0 deaths; typhoid fever, 84 cases, 9 deaths; scarlet fever, 39 cases, 2 deaths; chickenpox, 9 cases, 0 deaths; diphtheria, 60 cases, 9 deaths; measles, 11 cases, 0 deaths; whooping cough, 32 cases, 8 deaths; pulmonary tuberculosis, 90 cases, 38 deaths; pneumonia, 17 cases, 23 deaths; puerperal fever, 1 case, 4 deaths; erysipelas, 2 cases, 0 deaths; mumps, 2 cases, 0 deaths; infantile paralysis, 18 cases, 1 death; trachoma, 3 cases, 0 deaths. There were 2 deaths from tuberculosis other than that of the lungs, and 44 from diarrhœal diseases under two years of age. There were 30 stillbirths: 13 males and 17 females. The deaths from all causes numbered 395, in an estimated population of 1,598,400, corresponding to an annual death rate of 12.85 in a thousand of population.

The Health of Chicago.—During the week ending October 22, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 96 cases, 7 deaths; measles, 12 cases, 0 deaths; whooping cough, 3 cases, 0 deaths; scarlet fever, 107 cases, 7 deaths; diphtheria, 174 cases, 26 deaths; chickenpox, 51 cases, 0 deaths; tuberculosis, 186 cases, 67 deaths; pneumonia, 24 cases, 66 deaths; cerebrospinal meningitis, 2 cases, 0 deaths. Twenty-six cases of other diseases of minor importance were reported, making the total number of cases reported 681, as compared with 588 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 64. There were 21 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 158, of whom 109 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 565, corresponding to an annual death rate of 13.5 in a thousand of population, as compared with a rate of 13.2 for the preceding week and 14.6 for the corresponding period last year.

Society Meetings for the Coming Week:

MONDAY, *November 7th.*—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Hornell, N. Y., Medical Society.

TUESDAY, *November 8th.*—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club, Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine); Newburgh Bay Medical Society; New York Obstetrical Society.

WEDNESDAY, *November 9th.*—New York Pathological Society; New York Surgical Society (annual); Medical Society of the Borough of the Bronx, New York; Alumni Association of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

THURSDAY, *November 10th.*—New York Academy of Medicine (Section in Pædiatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

FRIDAY, *November 11th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society.

SATURDAY, *November 12th.*—Therapeutic Club, New York.

Vital Statistics of New York.—During the week ending October 22, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,269, corresponding to an annual death rate of 13.78 in a thousand of population, as compared with a rate of 15.38 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 13.84; the Bronx, 14.95; Brooklyn, 13.27; Queens, 13.20; Richmond, 18.08. There were 123 stillbirths. The deaths of children under five years of age numbered 366, of whom 278 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 119; over five years of age 131. There were 16 deaths from suicide, 1 from homicide, and 70 due to accidents. One thousand and nineteen marriages and 2,558 births were reported during the week.

Cholera in the Philippines.—According to reports submitted by the chief quarantine officer, dated August 19 and 25 and September 2, 8, and 14, 1910, cholera was reported in the city of Manila as follows: During the week ending August 13th, 14 cases, 10 deaths; week ending August 20th, 16 cases, 11 deaths; week ending August 27th, 21 cases, 11 deaths; week ending September 3d, 25 cases, 18 deaths; week ending September 10th, 15 cases, 15 deaths. The number of cases in the city of Manila is somewhat augmented over the number reported for previous weeks. Eight of the cases were directly traced to having been introduced from Bulacan Province by persons who were seeking work at Pandacan, a suburb of Manila. The total number of cases of cholera occurring in the provinces has been slowly declining, the average now a week being approximately 360, as compared with 550 several weeks ago.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending October 29, 1910:

	October 22d.		October 29th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	515	163	456	142
Diphtheria and croup	253	18	245	18
Measles	75	2	85	1
Scarlet fever	90	3	85	2
Smallpox	..	..	..	..
Varicella	44	..	39	..
Typhoid fever	108	20	113	14
Whooping cough	24	2	41	3
Cerebrospinal meningitis	2	2	5	7
Total	1,111	210	1,069	187

Physician (Male).—The United States Civil Service Commission announces an examination on November 23, 1910, to secure eligibles from which to make certification to fill vacancies as they may occur in the position of physician in the different services. As an insufficient number of eligibles to meet the needs of the Indian and Isthmian Canal services resulted from the examination held on September 14th, qualified persons are urged to enter this examination. Full information regarding this examination is contained in section 197 of the Manual of Examinations, revised to July 1, 1910. Applicants must have reached their twentieth birthday, but not their fortieth birthday, on the date of the examination. Applicants for positions in the Indian Service must accompany their applications with a certificate from a reputable physician showing that they are in good health and free from tuberculosis in any and every form. Men only will be admitted to this examination. This examination is open to all citizens of the United States who comply with the requirements. This announcement and the Manual contain all information which is communicated to applicants regarding the scope of the examination, the vacancy or vacancies to be filled, and the qualifications required. Examination Forms 2 (including the medical certificate) and 375 for the Philippine Service, and Form 1312 (including the medical certificate) for the other services. Applicants should at once apply for a copy of the Manual and the proper forms either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners as follows: Post office, Boston, Mass.; Philadelphia, Pa.; Atlanta, Ga.; Cincinnati, Ohio; Chicago, Ill.; St. Paul, Minn.; Seattle, Wash.; San Francisco, Cal.; Custom House, New York, N. Y.; New Orleans, La.; old Custom House, St. Louis, Mo.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

October 27, 1910.

1. Cholelithiasis, By RICHARD F. CHASE.
2. Further Observations on the Wassermann Reaction for Syphilis, By WILLIAM P. BOARDMAN.
3. The Technique of Arthrotomy. A Report upon and Discussion of One Hundred and Ninety-eight Cases, By CHARLES F. PAINTER and ANDREW P. CORNWALL.

2. **Wassermann Reaction for Syphilis.**—Boardman remarks that a positive reaction is obtained in a large number of syphilitic cases, and if one adheres to the original Wassermann technique a positive reaction in a suspected case means syphilis almost without exception. A negative reaction in a suspected secondary or tertiary or congenital case means that it is probably not syphilis, but the finding should be used with caution and only in conjunction with clinical evidence and not by itself alone. A negative reaction in a suspected primary case, except one of long duration, and in an early case of general paresis, has very little value. In treated cases it has very little value except some months after treatment has ceased. He concludes that in the Wassermann reaction we have a definite aid to diagnosis, but its value in treatment and prognosis has not yet been carefully worked out.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 29, 1910.

1. Recent Progress in Microscopical Anatomy and Differentiation of Cancer, By F. B. MALLORY.
2. Mechanical Ileus Complicating Pregnancy, By PHILIP SCHUYLER DOANE.
3. Colon Bacillus Infection of Operation Wound, By EDMUND A. BABLER.
4. The Tuberculous Tonsil, By ROBERT LEVY.
5. Conditions Demanding Enucleation of the Faucial Tonsils, By JOSEPH C. BECK.
6. Enucleation of the Faucial Tonsils, Its Difficulties and Contraindications, By B. R. SHURLY.
7. Recent Progress and Present Status of Experimental Research in Cancer, By LEO LOEB.
8. Biochemical Investigation of Malignant Tumors and Its Diagnostic Applications, By RICHARD WEIL.
9. Relation of Heredity to Cancer, By E. E. TYZZER.
10. Recent Progress in Surgical Treatment of Malignant Growths, By JOSEPH C. BLOODGOOD.
11. Cardiospasm with Dilatation of the Œsophagus, By JESSE S. MYER.
12. Strangulated Congenital Umbilical Hernia, By I. R. MAERCKLEIN.
13. A Uvula Forceps and a Combined Tonsil Scissors and Separator, By HENRY R. BOETTCHER.
14. Note on Treatment of Typhoid, By LOUIS M. WARFIELD.
15. Medicine Dropper Clip, By PERCY R. WOOD.

4. **The Tuberculous Tonsil.**—Levy says that tuberculosis of the tonsils occurs more frequently than previously recognized, owing to newer methods of investigation. Clinically, tuberculosis of the pharynx, with or without tonsilar involvement, must still be looked on as among the rarer manifestations of tuberculosis. Clinical tuberculosis of the tonsils and that determined by histological examination present marked differences. They are distinguished by the absence of symptoms in the latter and definite subjective and objective manifestations in the former. Many of the histological findings attributed to tuberculous changes occur in other pathological conditions. The diagnosis of true tuberculosis of the tonsils is more satisfactory when based on definite physical signs corroborated by typical histological findings. It is not necessary to attribute all forms of cervical adenitis to tuberculosis. Tuberculosis of the tonsil may be considered the result of a local reaction. The clinical form must be looked on as very grave, its curability being extremely doubtful. Extirpation of the tonsils is rarely indicated. In the presence of cervical adenitis, lowered resistance, and evidences of malnutrition the best interests of the patient will be subserved by radical tonsillectomy even though other well recognized indications for the operation should be absent.

5, 6. **Enucleation of the Faucial Tonsils.**—Beck gives the following conditions which are benefited by enucleation of the tonsils: 1. Local conditions affecting the tonsil itself: 1. Chronic lacunar amygdalitis in which there are repeated acute attacks, or repeated attacks of peritonsillar abscess. Tuberculous tonsil. Primary chancre of the tonsil. Malignant disease of the tonsil. Acute infections, such as diphtheria, scarlet fever, etc. 2. The regional conditions are: Chronic persistent pharyngitis, especially lateral. Tubal catarrh associated with middle ear disease. Enlarged glands of the neck. Apical tuberculous infection. Perpetuating bronchitis in children. 3. General or systemic conditions: Rheumatism, with its complications and sequelæ, as, endocarditis and myocarditis, arteriosclerosis, arthritis, pericarditis, pleurisy, peritonitis, perineuritis, and myositis—so called muscular rheumatism. Blood changes, as chronic septichæmia with secondary anæmias. Gastrointestinal disturbances, such as gastroenteritis, and duodenal catarrh, with a subsequent cholangitis. Parenchymatous changes, such as parenchymatous nephritis, hepatitis, and pancreatitis. Changes in the special organs, as episcleritis and phlyctenular keratoconjunctivitis.—Shurly states that the normal tonsil should not be disturbed, particularly in early infancy. Simple hypertrophied tonsils may be removed satisfactorily with the tonsillotome. Pathological tonsils, especially those of the submerged type that produce well defined local or general symptoms, should be completely removed within the capsule. In children tonsillectomy requires a general anæsthetic, preferably, ether. This should be a hospital operation when possible. Tonsillectomy is an operation that should be restricted to those who are especially qualified. The removal of the velar lobe and the complete separation of the pillars are the most important parts of the tonsil operation. Tonsillectomy is not indicated in all cases of so called rheumatism. Complete enucleation is usually attended by more pain, a longer period of convalescence, and greater danger of infection than tonsillotomy. When tonsillectomy is skilfully performed the hæmorrhage is less than when the average tonsillotomy is done. Tonsils which have been involved in recent acute inflammation should not be operated on, until all evidence of the acute condition has subsided. Many tonsils seen by the general practitioner, with every appearance of serious pathological condition, never develop local systemic symptoms.

7. **Research in Cancer.**—Loeb, in speaking of recent progress and the present status of experimental research in cancer, says the experimental study of the physiology of tissue growth has led to some interesting results. Of these he mentions only two achievements obtained within the last few years. Definite chemical substances, namely, amido derivatives of certain aromatic products have been found to be particularly potent in calling forth infiltrative growth of the epithelium into the underlying connective tissue; and infiltrative growth is one of the characteristic features of the cancerous proliferation. A further advance has been made in the analysis of formative stimuli; it has been found that a combination of an internal chemical and an external mechanical factor may exert a specific stimulus on the growth of certain selected tissues to an extraordinary degree; the chemical substance acting as a sensitizer of the tissues, preparing them for the action of the mechanical factor. We may conveniently designate such stimuli as "combination stimuli." In both of these instances we have not yet to deal with the production of true cancers, inasmuch as the growth is only of a transitory character; but in both cases means have been found of analyzing the two most characteristic attributes of cancerous growth, not only in a qualitative, but in part at least, also in a quantitative way.

9. **Relation of Heredity to Cancer.**—Tyzzer observes that heredity plays a rôle in the general incidence of cancer with regard to species as is indicated by the frequency of mammary tumors in mice, while they are rare in cattle, which, however, frequently develop primary tumors of the liver and adrenal. The question whether tumors are inherited as such is not raised by modern investigators. Statistical inquiries concerning the inheritance of a predisposition to cancer lack accuracy, and are surrounded by almost insurmountable difficulties. The results of these investigations fail in most instances to indicate the inheritance of such a disposition. The occurrence in rare instances of families in which cancer is notably frequent appears to be well established. The occurrence of these families is regarded by many as not remarkable, but as wholly consistent with the law of chance in the distribution of cancer throughout the population. Others point out that if the occurrence of cancer families is established, the question of heredity will not be solved for peculiarities of environment are not eliminated. In melanosarcoma in gray horses, and in both xeroderma pigmentosum and von Recklinghausen's disease heredity appears to be an important factor. Although much of the evidence collected tends to indicate that heredity is not an important factor in the development of cancer, it would appear that this question cannot be definitely settled without the use of more accurate methods than have heretofore been employed. For this work the importance of the experimental breeding of animals cannot be overestimated, for here it is possible not only to obtain accurate data, but to shape the course of the experiment.

MEDICAL RECORD.

October 29, 1910.

1. Pernicious Anæmia: Its Definition and Treatment, By E. Grawitz.
2. Suppuration of the Antrum of Highmore, By Walter A. Wells.
3. Remarks on the Twentieth Anniversary of the American Electrotherapeutic Association, By A. D. Rockwell.
4. A Case of Typhoid Meningitis, By Benjamin Schwartz.
5. The Saw and Crushing Instruments in Surgery of the Nasal Septum, By Bryan DeF. Sheedy.
6. Gonococcus Urethritis in Male Children, By Abraham Leo Wolbarst.
7. The Bedside Widal Test, By George Gillman.
8. Exophthalmic Goitre Simulating Typhoid Fever, By Louis Dlugasch.

2. **Suppuration of the Antrum of Highmore.**—Wells states that in empyema of the antrum the cavity should be irrigated by means of a simple puncture through the inferior meatus. If the pus is draining into the antrum from a neighboring sinus, the indication, of course, is imperative to cure the affected sinus responsible, in order to prevent a reaccumulation of the pus. If a diseased tooth is at fault it should be extracted, and if the removal of the tooth makes a passage directly into the cavity irrigation may be practised through this route. In acute maxillary sinusitis one should irrigate the cavity as suggested for empyema; this failing, it may be necessary to make a wide artificial opening in the lower part of the nasoantral wall for ventilation. In chronic maxillary sinusitis one should make a wide artificial opening in the nasoantral wall; this failing, one should expose the sinus through the facial wall and curette the interior. To make a simple irrigation of the sinus a fine trocar and cannula are used, and the puncture made in the inferior meatus, close under the attachment of the inferior turbinal, where the bone is thinnest. This procedure can be done quite painlessly under a local anæsthetic. To make a large opening through the nasoantral wall it is necessary in most cases to remove the anterior part of the inferior turbinal. An artificial opening should then be made in the lowest part of the outer wall of the nose, close to its floor, as being the most favorable position for drainage. This opening can be utilized subsequently as a way for washing out the cavity, and often it will allow of a limited curettage of the antral cavity.

6. **Gonococcus Urethritis in Male Children.**—Wolbarst says that gonococcus infection in male children is not a rare condition, though it is far less common than in female children. Infection is usually the result of precocious sexual activity, or accidental infection in the home; sexual perverts undoubtedly infect a goodly number of children. In hospitals a fairly large number of infections take place, presumably through infected catheters, etc. These young patients are liable to all of the extensions and complications that occur in the adult. It is possible that many cases of sterility, sexual neurasthenia, and urethral stricture are due to gonococcus infection in childhood. The treatment is practically the same as in the adult.

BRITISH MEDICAL JOURNAL.

October 15, 1910.

1. The Education of the Student of Medicine, By Howard Marsh.
2. Remarks on Acute Arthritis of Doubtful Origin, By H. D. Rolleston.
3. Experiment and Observation in Medicine, By J. A. Codd.
4. On Fever Caused by the Bite of the Sandfly (*Phlebotomus papatasii*), By T. G. Wakeling.
5. Skiagrams of Multiple Renal Calculi and of Fractures due to Muscular Violence, By Owen L. Rhys.

Twenty-eighth Annual Meeting of the British Medical Association.

SECTION IN DISEASES OF CHILDREN.

6. Discussion on the Diagnosis and Treatment of Non-tuberculous Joint Diseases in Children, Introduced by J. A. Coutts.
7. The Conservative Treatment of Tuberculous Cripples, By H. J. Gauvain.
8. Spinal Caries and Hip Disease: A Point in Differential Diagnosis, By W. B. Parsons.
9. Discussion on Infections of the Urinary Tract by *Bacillus coli* in Infancy and Childhood, Introduced by Charles R. Box.
10. A Combined Quinine and Hydropathic Treatment of Whooping Cough, By Theodore Zangger.
11. The Early Diagnosis of Tuberculous Bronchial Adenopathy in the Child, By Adolphe D'Espine.
12. Acetonæmia: An Account of an Acute Attack in a Young Child, By John McCaw.
13. Human Milk and Breast Feeding, By Dr. Olive M. Elgood.
14. Lesions of the Isolated Appendix Vermiformis in the Hernial Sac, By H. Tyrrell Gray.
15. Banana Flour as a Food for Infants, By Eric Pritchard.
16. The Radical Treatment of Tuberculous Disease of the Tarsus and Anklejoint, By J. Keogh Murphy.

SECTION IN ANATOMY.

17. The Pharyngeal Tonsil, By J. Symington.
18. The Early Development of the Eustachian Tube and Nasopharynx, By J. Ernest Frazer.
19. The Size of the Antrum and the Position of the Permanent Teeth, By A. C. Geddes.
20. Six Abnormalities from the Dissecting Room, By A. C. Geddes.
21. The Anatomy of the Trigonum Vesicæ, By William Wright and T. C. Benians.
22. Emanuel Swedenborg as an Anatomist, By M. Ramstrom.
23. An Anencephalic Fœtus, with a Meningocele and Facial Cleft, By Reginald J. Gladstone.
24. The Muscle of Treitz and the Plica Duodenojejunalis, By P. T. Crymble.
25. A Cyclops and Agnathous Lamb, By Reginald J. Gladstone.
26. A Case of Congenital Absence of the Transverse Mesocolon, By N. C. Rutherford.
27. Recent Researches on the Anatomy of the Bird's Heart, By Ivy McKenzie and Jane I. Robertson.

2. **Acute Arthritis.**—Rolleston observes that acute arthritis may be a manifestation of various diseases; but while some fevers are so constantly characterized by obvious cutaneous changes as to be grouped together as the exanthemata, the occurrence of arthritic changes are less constant in well recognized diseases. He thinks, from a teleological point of view, that the object of cutaneous rashes is to give warning that the individual is infectious; but the same spirit of final causes might urge that the reason why certain diseases, such as acute rheumatism and in some instances scarlet fever, affect the joints is that, by limiting movement, rest for the heart may be ensured. Teleological explanations though attractive are dangerous, and this one will not stand much criticism. The other point on which he insists is that a weakness in resistance on the part of the joints, whether inherited or acquired, may determine inflammation in the joints in certain persons when attacked by an infection or disease which in ordinary persons is not characterized by arthritic manifestations. This probably accounts for the rare form of arthritis exceptionally seen in hemiplegia and paraplegia.

4. **Sandfly Fever.**—Wakeling defines sandfly fever as a non fatal, three days' fever, with a week's convalescence and certain sequelæ, due to the bite of the *Phlebotomus papatasii,* known to exist in Egypt, part of Austria, Malta, and in Italy; and it will probably be found widely distributed. The symptoms are local and general. The bite is followed by intense itching and irritation of the part, which persists, and which is followed by the formation of a raised lump with a small watery head, and with a surrounding zone of inflammation. As the flies bite at night, sleep may be prevented for some hours. The illness begins with a feeling of tiredness, loss of appetite, malaise, headache, aching in limbs, chilliness, disinclination to do things; rigors are uncommon; vomiting takes place sometimes. The temperature rises sharply to 101° or 104° F. (less in recurrent attacks). There is a disordered digestion, furred tongue; constipation is marked, occasionally there may be diarrhœa; the hands and feet are hot, the pulse is bounding and increased in rapidity. Blood pressure is probably raised from the beginning. Later there is well marked anæmia and rapid loss of weight. There is a tendency to inflammation of synovial and pleural cavities, and to neuritis and headache. The microorganism is probably not got rid of easily, and months after an attack chill or exposure to wet may bring on another attack of fever, accompanied by effusion into synovial or pleural cavities, or neuritis. He has failed to find any organism in the blood. The incubation period is about four days. Three days' fever in cattle is well known in Egypt; and it is possible that the disease may be conveyed from them to human beings, as the flies are found in large numbers in the vicinity of dwellings and stables. The fly is said to be called by the natives "akhl-uskut," silent eater. This is hardly true, as the fly makes a high pitched noise similar to that of the *Culex* mosquito, only much higher pitched. The fly is light brown in color, so small that it can pass through the meshes of a mosquito curtain. The wings are held up away from the body, and are covered with hairs. The head is joined to the body by a narrow neck. The eyes are very large and prominent. The proboscis is about twice the length of the head, and contains a fine stiletto. The antennæ are three times the length the proboscis, and are covered with hair. The body of the fly is of the same color—light brown—and hairy. The thorax gives the impression of humpback. The abdomen is narrow, but when the fly is fed it becomes very prominent and darker in color from the ingested blood. The genital organs show an extraordinary difference between male and female; the male being provided with large and powerful grasping apparatus. The legs of the fly are long, hairy, and provided with a terminal hook, which enable it to hold on and obtain purchase for driving in its proboscis. The proboscis of the male

is somewhat shorter than that of the female. The fly runs quickly, and is possessed of much intelligence in hiding or endeavoring to escape. The female phlebotomus bites. It is not certain at present whether the male does or not. The flies are usually to be found in pairs. The treatment is symptomatic.

6. **Nontuberculous Joint Diseases in Children.**—Coutts, in his remarks, states that joint affections are the most frequent in scarlet fever. Suppurative arthritis may occur quite early in the disease, and such cases are generally, but not necessarily, fatal. Such cases are undoubtedly pyæmic, and generally associated with grave destructive lesions of the palate and fauces. But the commonest joint affection is that which was formerly, rightly or wrongly, known as scarlatinal rheumatism. "It usually affects adults and older children, especially females. Its time of onset is remarkably constant, namely, the fifth, sixth, or seventh day of attack, just when the temperature is falling to normal. The arm is more often affected than the leg, the smaller joints than the large, and the wrists and metacarpal joints most of all; the heart and pericardium are very rarely affected, and recovery is rapid." With regard to treatment, all suppurating joints should at once be opened and an appropriate serum freely administered. For the slighter and more usual form of arthritis sodium salicylate will be given or not, according to the views held as to its rheumatic character.

9. **Infection of Urinary Tract in Childhood.**—Box says that infections of the bladder, ureters, and kidneys by the colon bacillus are the commonest of all infections of the urinary tract in childhood. The condition may occur at all ages—from infants a few weeks old to children in their teens. It is usually uncomplicated, the cases where it is secondary to other urinary lesions being exceptional. The sex incidence is very characteristic: Morse in 50 infants found 30 females, against 20 males. Abt found 21 females, against 1 male. Escherich found 10 females, and no male. Finklestein found 7 females, and no male. In 18 consecutive cases of his own there was only 1 male. These figures strongly suggest the ascending character of the infection. The disease may reveal itself in childhood either as an acute or as a chronic condition. In the acute infection either the constitutional or the local symptoms may be predominant. In the chronic infection the local symptoms may almost sink into abeyance. and the constitutional symptoms may remain slight for long periods. The acute infections show a great tendency toward complete recovery, but relapses occur occasionally. The chronic infections show periodic exacerbations of symptoms, either local or general. The main methods of treatment he summarizes as follows: 1. The administration of sufficient potassium citrate to make and keep the urine permanently alkaline. 2. Treatment by urinary antiseptics. 3. Treatment by sera and vaccines. In his experience all that is necessary in the treatment of cases with acute local symptoms is the administration of potassium citrate in doses of from ten to twenty grains three or four times daily. With this may be combined an antispasmodic drug, such as belladonna or hyoscyamus.—In the discussion that followed Pardue summed up his experience as follows: 1. The acute autogenous infections with *Bacillus coli* are less common in children than in adults. These acute infections show the same tendency to comparatively rapid and complete cure as is observed in older patients. 2. Chronic autogenous infections in children are also more rare than in adults. They also show the same intractability to treatment. 3. Chronic infections dependent upon, or occurring coincidently with other conditions of the genitourinary tract, show a much greater tendency to complete cure than is the case in adults, after the cause (that is, stone or obstruction to micturition) has been removed. 4. Local treatment in autogenous infections is of small value. 5. Vaccines are of little value in acute cases, but are most valuable in chronic cases.

13. **Human Milk and Breast Feeding.**—Elgood observes that the constituent of human milk most important to the healthy growth of the child is the fat. To maintain the healthy growth the percentage of fat content in the milk must be kept at a constant level and not be allowed to fluctuate. Therefore in treating any given case the examination must be made frequently to ensure that this constancy is present. To maintain both the necessary constancy of fat percentage, and a good quantity of milk in the breast, the nursing mother must be fed with regular meals. The variations of fat are not dependent upon increasing concentrations of the milk as lactation proceeds, but are actual variations in the secretion dependent upon some accidental and temporary variation in the physical condition of the mother.

27. **The Bird's Heart.**—McKenzie and Robertson found that in a bird's heart there is no bundle of His, or other specialized form of muscle tissue connecting the auricles with the ventricles. The sinoauricular node is also absent. There are peculiar nerve structures, or structures in close association with nerves, at the root of the aorta and pulmonary artery. The aorta and pulmonary artery are surrounded at the bases of the semilunar valves by a loose reticulum of poorly striated muscle fibres in a cellular matrix.

LANCET

October 15, 1910.

1. The Education of the Student of Medicine, By F. Howard Marsh.
2. Industrial Tuberculosis. By T. D. Lister.
3. Mineral Waters as Artificial Sera: A Short Account of Investigations on the Question of Mineral Waters as Artificial Sera and of Injections of Mineral Waters into the Tissues both from a Physiological and a Therapeutical Point of View, By C. Fleig.
4. Ulcerating Granuloma of the Pudenda a Protozoal Disease, By R. Markham Carter.
5. A Case of Tumor of the Pituitary Body, By William Boyd.
6. A Case of Carcinoma of the Cæcum Removed after a Preliminary Evacuation of a Fæcal Abscess and an Ileosigmoidostomy; Patient Well a Year Later. By John D. Malcolm.
7. Treatment of a Uterine Fibroid by X Rays. By Agnes F. Savill.
8. A Case of Uræmia with Facial Paralysis and Intestinal Ulceration, By G. Parker.
9. Radium and Radioactivity, By Dr. Guyenot.

2. **Industrial Tuberculosis.**—Lister gives very interesting statistical material, reviewing phthisis as a disease of occupation. The article should be read

in the original, as it is impossible to condense it into a short review.

3. **Mineral Water as Artificial Sera.**—Fleig says that in order to render a precise statement of the indications necessary for injections of mineral waters of different groups many clinical observations are requisite, but from the present time, by taking as a basis for our researches the investigations already carried out on injections of normal saline solution and on hydromineral treatment administered by the classical methods, we can foresee the series of cases in which the mineral waters would be indicated. Naturally it would be most interesting if we could choose the water which, from its chemical composition and from its various known properties, would seem best suited to the case under treatment; thus a kind of differentiation, becoming more and more distinct, would take place between the different groups of mineral waters (bicarbonated, sulphurous, etc.) to be employed as injections. A most important study is grafted on to the last dicta, it is the comparison on the one hand between the effects produced by injections of mineral waters taken on the spot from the spring itself (in most cases without any modification), and on the other hand, the effects produced by injection of the same waters after a more or less prolonged interval since their exit from the spring. It would be of very great interest to be able to give precise data concerning in what proportion the results obtained with the "living" waters can be assimilated with those of the "old" or "dead" waters. These advantages of injections of mineral waters into the tissues as a method of so called cellular balneotherapy and of the application of the hydromineral cure in general are very numerous, but the greatest discrimination is imperative in utilizing these injections in certain cases, as they cannot in any way be looked upon as substitutes for the methods of administration habitually employed, although they are calculated to augment the activity of these last and to notably enlarge the field of application, already so extended, of hydromineral medication.

PRESSE MEDICALE.

September 3, 1910.

1. Protracted Cerebrospinal Meningitis with Cachexia as Sequela, By Robert Delvé.
2. A Case of Internal Luxation of the Foot without Fracture, By C. Lenormant.
3. Bacterial Vaccines, By Alfred Martinet.

September 7, 1910.

Intraintestinal Hæmorrhage in Wounds of the Intestine, By M. Guibé.

September 10, 1910.

1. How to Work in Compressed Air, By J. P. Langlois.
2. Sulphate of Hordenine in the Treatment of Intestinal Affection, By Alfred Martinet.

2. **Hordenine Sulphate.**—Martinet speaks well of Hordenine, $C_{10}H_{15}NO$, sulphate in diarrhœas of children and adults, and especially in dysenteria, from one to two grammes in children, four to six grammes in adults.

September 14, 1910.

1. What is the Cause of Cammidge Reaction? By L. Grimbert and R. Bornier.
2. Continuous Respiration, By R. Pla y Armengol.

2. **Continuous Respiration.**—Pla y Armengol has observed the absence of a pause between expiration and inspiration in patients with tuberculous infiltration of the lungs during the first stage. The sound of inspiration is heard continually. He concludes that this continuous respiration is another proof in favor of the opinion that the vesicular murmur is the acoustic expression of friction produced from the dilatation and contraction of tissues by the passage of the air through the pulmonary parenchyma; as opposed to Baas's opinion that the vesicular murmur is only a transmission of the laryngotracheal sound.

September 17, 1910.

1. The Argyll Robertson Sign Cannot be the Result of Basal Meningitis, By C. Lafon.
2. The Importance of Gastroenterostomy, By P. Desfosses.

September 21, 1910.

1. Tuberculin Treatment of Tuberculosis of the Urinary System, By C. Mantoux.
2. Climatic Surroundings and Organic Conditions, By Alfred Martinet.
3. Method of Respiratory Reeducation, By A. Thooris.

September 24, 1910.

1. Mydriatic Action of Organ Extracts and Fluids, By Edoardo Catapano.
2. The Influence of Collargol upon the Opsonic Index, By C. Pastia.

September 28, 1910.

1. Hydrotherapy in Pregnancy, By G. Keim.
2. Aerophagy, By G. Schreiber.

SEMAINE MÉDICALE.

September 7, 1910.

1. Medical Progress from 1830 to 1870, By R. Lépine.
2. Surgical Treatment of Adhesions of the Pericardium, By J. L. Roux-Berger.

2. **Surgical Treatment of Pericardial Adhesions.**—Roux-Berger gives a review of the development of surgical treatment of pericardial adhesions. Surgical interference, he says, was first suggested by Weill, of Lyon (1895), and taken up by Delorme, of Paris, in 1898, whose operation was not practical. But Brauer, of Heidelberg, in 1902, found a method, which was partly successful. Twenty-one patients were successfully operated upon, but in seven the technique was a failure. Roux-Berger contends that cardiolysis or præcordial thoracectomy should only be used in very characteristic cases, that is in cases of adhesive mediastinal pericarditis, and when the myocardium is in a healthy condition.

September 14, 1910.

Cryptogenic Peritonitis, By R. de Bovis.

September 21, 1910.

1. Metamorphosis of Neoplasms, By F. de Quervain.
2. Pseudocongestion of the Lungs through Pressure from the Diaphragm, By M. Roch and G. Fulpius.

2. **Pseudocongestion of the Lungs through Pressure from the Diaphragm.**—Roch and Fulpius remark that expansion of the diaphragm encroaching upon the lungs will produce a pleural effusion, sometimes accompanied by râles, which are not constant. Auscultation and percussion will be of help in distinctive diagnosis of such cases.

September 28, 1910.

1. Indications for Operations in Gastric Pathology, By Henry Valliet.
2. Report on 606, By E. Fuld.

2. Report on 606.—Fuld reviews the results from the treatment with Ehrlich's dioxydiamidoarsenobenzol in syphilis.

EDINBURGH MEDICAL JOURNAL.

October, 1910.

1. The Relief of Cardiac Enlargement by Surgical Measures, By G. A. Gibson.
2. Gonococcic Arthritis and Its Treatment, By William Murrell.
3. A Working Plan of Clinical Medicine Teaching, By William Russell.
4. Gastrojejunal and Jejunal Ulceration Following Gastroenterostomy, By D. P. D. Wilkie.
5. The Care of the Infant and Young Child (to Five Years) in Edinburgh, By A. Dingwall Fordyce.

2. Gonococcic Arthritis. — Murrell remarks that a difficulty is often experienced in diagnosticating between different forms of infective arthritis. If an arthritis follows a specific urethritis, the probabilities are that it is a gonococcic arthritis, and, similarly, if it follows an acute lobar pneumonia, it is probably pneumococcic. But often enough the preceding history affords us little guidance. In some varieties of arthritis, the rheumatoid for example, although there is much pain there is little effusion. Even when there is considerable effusion the fluid obtained by aspiration may be sterile, showing no microorganisms in the films and no growth on cultivation. A more annoying condition is when many different organisms are found but nothing characteristic. Individual cases often present difficulties in the matter of diagnosis. A bacteriological examination may throw some light on the subject, but often there is nothing to examine. It is conceivable that the man may have an acute attack of gout with a superadded gonococcic arthritis. As to the distinctive diagnosis between gonorrhœal and muscular rheumatism, he says that in the gonococcic variety the plantar fasciæ are commonly involved, and the patient complains of pain in the head. The erector spinæ muscles may be attacked, and there may be pain referred to the region of the diaphragm, a condition not met with in the muscular form in which the fasciæ of the neck more often suffer. Of treatment he states that he has lately treated a considerable number of cases of gonococcic arthritis with an antigonococcic serum. He has usually given a series of 25 c.c. spread over a period of twenty-four hours; for example, 10 c.c. at 10 a. m., 5 c.c. in the evening, and 10 c.c. the following morning. In some cases, although not in all, there has been a reaction indicated by a rise in temperature of a couple of degrees, with slight constitutional disturbance and increased pains in the joints. Sometimes there has been a serum rash, usually an erythema or an urticaria, but it has been transitory. His general impression was that the serum was useful, as there were many cases of apparent success, but subsequently he met with a still larger number of cases in which it was a distinct failure, and has now come to the conclusion that an antigonococcic serum is of little or no therapeutical value. Of the gonococcic vaccine he observes that autogenous vaccines are superior. In acute gonorrhœa vaccine treatment is not devoid of danger, and requires caution. In chronic gonorrhœa, where there is usually a mixed infection, the most satisfactory results are obtained when the gonococcus is the sole infecting organism. In gonococcic iritis the symptoms are relieved in from three to four days, a result which is satisfactory, having regard to the obstinate nature of these cases. In the arthritic form the symptoms are said to have cleared up in from thirty-six to forty-eight hours, the pain and tenderness passing off and leaving greater movement in the joints.

4. Gastrojejunal and Jejunal Ulceration.—Wilkie concludes, from his experience, that excessive acidity of the gastric contents will not of itself bring about ulceration in the jejunum after the operation of gastroenterostomy. The union of the cut edges of the gastric and jejunal mucous membranes, after the operation of gastroenterostomy, takes place by granulation, taking on an average seven days to be complete. Marked superacidity of the gastric contents tends to retard healing, and may lead to an extension of the ulcerative process, which, in some degree, is invariably present. Trauma, as for example, from solid food passing over the granulating area, is an important factor in retarding the process of repair. The presence of an unabsorbable suture in the granulating area tends to delay repair. It is therefore advisable to employ some absorbable material, such as catgut, for the inner suture. Chronic gastrojejunal ulcer, as found in the human subject, is probably due to a failure of the gastroenterostomy wound to heal completely. In cases in which the operation of gastroenterostomy has been performed, functional closure of the pylorus may be simply and effectively brought about by one or two suitably placed Lembert sutures.

GLASGOW MEDICAL JOURNAL.

October, 1910.

1. Advice to Patients in Bellefield Sanatorium, Lanark, By James W. Allan.
2. Some Problems in Infant Feeding, By Leonard Findlay.
3. Two Cases of Acute Leuchæmia, By John Shaw Dunn.
4. A Case of Strangulated Femoral Hernia (Richter's Variety)—Enterectomy—Lateral Anastomosis—Recovery, By John Morton.
5. Double Central Blindness Following upon Injury to the Head by a Fall, By Leslie Buchanan.
6. Notes on Some Old Glasgow Institutions with Medical Associations (*Concluded*), By Hugh A. M'Lean.

5. Double Central Blindness Following upon Injury to the Head by a Fall.—Buchanan reports a case of a man who as a result of a fall on to the street and striking the back of his head on the causeway stones, lost the power of central vision of both eyes, while peripheral vision remained but little altered. As regards the position of the lesion it may be said that there are only two parts in the brain in which a single lesion could cause bilateral central blindness, i. e., the anterior part of the chiasma and the posterior part of the great longitudinal fissure. In the first of these positions it is possible that a spicule of bone might be driven through the tissues in consequence of a fracture of the body of the sphenoid bone. Although it is a comparatively common site in which to find a fracture, it is not by any means probable that only the macular fibres would be cut in the event of the optic commissure being injured. The optic chiasma would only be wounded by a piece of bone driven from below upward, in all probability, so that we have here a series of circumstances required for the production of that lesion which would be very uncommon. Regarding the other site in which it is probable that an injury such as occurred in this case would cause symptoms comparable to those found in this patient, it is considered to be the fact that the centres for vision are situated in the region of the calcarine fissure, at the deepest part of which the centre for the macula is situated. Granting that a hæmorrhage had taken place in this position in the meninges or between the layers of the membranes, it is a source of difficulty that while a hæmorrhage would press most strongly on the summit of the convolutions bordering on the calcerine fissure, leaving the deepest part of the sulcus little or not at all affected, here the damage done has been to the macular centre. The author concludes that the difficulties in the way of the acceptance of the first site are less than those in the way of acceptance of the second.

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Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-sixth Annual Meeting, held in Detroit, September 13, 14, and 15, 1910.

The President, Dr. Frank P. Norbury, of Hospital, Ill., in the Chair.

(*Continued from page 890.*)

Tuberculosis of Bones and Joints.—This paper, by Dr. Edward M. Brown, of Chicago, appears on page 905 of this issue.

The Responsibility of Physicians in the Traumatic Neuroses.—Dr. H. H. Drysdale, of Cleveland, in this paper discussed the history and manifestations of the traumatic neuroses in detail. In studying these conditions ætiologically he had arrived at the conclusion that the true genesis, in a large majority of cases, was psychic, and that it was fright, fear of death, anticipated pain, and anguish received unexpectedly by a totally unprepared sensorium which were the chief elements to be considered. Psychologically, fright was a fundamental emotion. Violent in action, it would under certain conditions of mind pervert the sense faculty, disturb the kinæsthetic equipoise, and deform the physical and psychic personality. He considered the manifestations of these conditions to be the involuntary expression of a break in the bodily feeling. These by degrees tended to organize and combine to form a morbid mental state, a delusive conception, as it were, toward which every thought converged. A faulty environment frequently did more harm than the actual injury, as it tended to make the individual introspective and depressed, and as a consequence he threw aside the normal weapons of defense and surrendered himself to the misfortune which had assailed him. From an experience of 108 cases investigated from the standpoint of the corporation as well as that of the patient, and which included in many instances the prelitigation also the postlitigation period, he had made several observations which he believed, if put into practice, would place the responsibility of adjusting these trying conditions on a scientific basis, and thus obliterate much of the confusion and disquietude which surrounded the traumatic functional disorders of the nervous system.

The Tubercle Bacillus Cultivated from Cases of Primary Tuberculous Cervical Adenitis.—Dr. William Litterer, of Nashville, in his paper stated that nine consecutive cases of primary tuberculous cervical adenitis were examined, which resulted in the isolation of five cultures of *Bacillus tuberculosis* of the typus humanus, and four cultures of the typus bovinus. The classification of the types was made on the basis of four tests, to wit: first, the morphological characters of the bacilli; second, the dysgenetic or eugenetic character of the cultures; third, the relative virulence toward rabbits; and, fourth, the reaction curve in five per cent. glycerin bouillon. This latter test served admirably to distinguish between the two types, provided there was repeated application and careful control over a period, in some instances, of eighteen months. He had found that the differences in the growth of the two types dysgenetic and eugenetic on Dorcet's egg medium were very valuable in distinguishing the bovine from the human type of bacillus. Rabbit virulence had probably been more uniformly satisfactory than any of the tests in determining the differences between the two types of bacilli.

The Teaching of Clinical Psychiatry; A Medical Educational Problem.—The President said that the subject of this, his address, had been chosen as a text in order to present certain imperative demands of medical education of to-day. What was sought was to utilize the opportunities at hand, develop new ones, and create higher ideals, readjusting ethical educational standards. The fundamental fact of the present controversy regarding medical education was that it was a part of the educational propaganda of the century—a world movement. In this country this progress was based, first, on the integration of the educational system; second, on the standardizing of undergraduate work; third, the standardizing of professional courses in medicine. Modern medical education was in the transitory stage in teaching clinical medicine. This transition began with Osler's work at Johns Hopkins. Clinical medicine to-day included the interpreters as well as the research workers. Medical sociology was the enlarged appreciation of the value of clinical medicine extended to the problems of ætiology, preventive medicine, occupational diseases, and general and special civic problems. The scope and value of such work was unappreciated by the unthinking masses of the profession. Clinical psychiatry was prominent in this field of newer clinical activity. It was in contact with more points in life, its realities, its ignorance, its prejudices, its ethical discordance, and its falsifications than any other department of medicine. A real need existed to-day for the teaching of these master problems of the age. The teacher must be a biologist in the widest clinical interpretation, a sociologist, that he might grasp all ætiological factors, and an internist, that he might be in touch with all the physical factors entering into the problem. Modern medical teaching must give to the student the opportunity to see the whole at near range. The teaching of psychiatry was a state need, just as much as any other problem of preventive medicine.

The Diagnosis of Surgical Lesions of the Kidney, with Special Reference to the Value of the X Ray and the Cystoscope.—Dr. Louis Frank, of Louisville, delivered the Address in Surgery. He said that, although the diagnosis of the character of new growths in the kidney might be impossible before operation, the recognition of a surgical lesion and of the surgical indications were not as a rule attended with great difficulty, provided a thorough, painstaking, and complete examination of the individual was made. In renal calculus we had at hand means for physical examination which in the presence of even very obscure symptoms would render the diagnosis in almost all cases practically certain. These were the cystoscope and the radiograph. The cystoscopic examination frequently showed a swollen ureteral orifice. The passage of the ureteral catheter would at once reveal from which kidney the blood or pus in the urine was coming. The cystoscope was not nearly so valuable an aid as the Röntgen ray. It did reveal whether or not one kidney alone was involved, or whether or not a kidney had ceased to functionate. Although secondary in value in the diagnosis of renal calculus to the x ray and to the clinical history, the cystoscope should always be employed previous to an operation as an aid in ascertaining which was the diseased kidney and the condition of the other kidney in regard to the character of its excretion. As a confirmatory diagnostic means the greatest value of the radiograph was in connection with renal calculi. The predominant signs of most renal affections of a surgical character were pain, hæmorrhage, urinary disturbance, and tumor. One or more might be absent or they might all be present in any given case.

The Modern Doctor; His Successes, His Failures, His Future.—Dr. John K. Mitchell, of Philadelphia, delivered the Address in Medicine, and among other things said that a time would come, since the disappearance of all disease was unlikely, when governments would make a more organized contest against it, would teach and enlist all physicians in a common army as they now educated and paid the soldier. This must come, because with improved sanitation and the constant advance of preventive means, illness would grow infrequent, so that unless he was a paid servant of the state the physician would not be able to exist. When that army was enlisted, the occurrence of preventable diseases would be as much a matter for court martial and the punishment of the person who allowed it to pass him as the failure in duty of a soldier asleep at his post. In that golden future in which sickness would be as rare as war was now, instead of being a single handed fighter, the doctor would serve as an enlisted man in the great battle for life and strength against illness and pain; he would have no new duties, perhaps, but new powers, ability to enforce obedience to laws of health, until, under wiser ways of life, death, the one unmedicinable disease, came only to the aged, approaching without notice, to be met without fear, bringing an ending peaceful and calm after an active life and a quiet old age.

Myositis Ossificans Progressiva.—Dr. Arthur R. Elliott, of Chicago, presented the clinical history of a case of this disease, showing x ray pictures which clearly demonstrated the bony deposits in various muscular areas. The patient, a girl of seventeen, first displayed symptoms of the disease at the age of two. The involvement of the muscular system was widespread, resulting in many deformities, and much restriction of movement. The general health had not as yet been greatly affected. Congenital malformations of the hands and feet existed, such as were observed in about seventy-five per cent. of recorded cases. This clinical record was the one hundred and second in the history of the disease since the first case was reported by Fuke in the *Philosophical Transactions* in 1740. The ætiology and pathology of the disease were briefly discussed.

Neurological and Psychiatric Aspect of Tuberculosis.—Dr. Charles H. Hughes, of St. Louis, stated that too much attention had been devoted to the classical form of lesion of pulmonary tuberculosis and too little to the other conditions of the organism, especially to the state of the nervous system and what impression was made upon the patient's mind. He was dealing somewhat with the detrimental effect of adverse psychic suggestion, and he wished to enter a protest and be as emphatic as he could against the pronouncement positively, where it could be avoided, of a diagnosis of tuberculosis to the patient in its earlier stages, and the putting of the patient upon the out door treatment alone of tuberculosis. He entered his protest against ignoring the detrimental effects of psychic suggestion and would speak of the beneficial effects of it in the treatment of pulmonary and other forms of tuberculosis. To tell a patient, when he had his first hæmorrhage, and the microscope revealed occasional tubercle bacilli, that he had tuberculosis and must sleep out of doors or in a cold room, with his body well wrapped, or sleep with his face out of a window in all kinds of weather for the purpose of giving him fresh air, a thing to which he had never been accustomed, exerted a detrimental influence or adverse psychic suggestion, and was a most potent influence in determining the fate of that individual. A friend of his was sent to Colorado at the time of his first hæmorrhage. He was a vigorous man, but led a sedentary life. He neglected those physical influences that were necessary to rejuvenate the blood and increase its vital resistance, to build up the metabolism and improve the cytological processes. He went to Colorado under the psychic impression that he was affected with pulmonary tuberculosis, a sort of suggestion which sealed the fate of more patients than those who suffered from tuberculosis. He went there, occupied a cold room, and slept with his head out of a window, with a cage arrangement so as to screen himself against mosquitoes. He declined steadily. He was dead now, although he went there as a strong man physically. The adverse influence on that individual of psychic suggestion sealed his fate—at least, prematurely. If the diagnosis and possible prognosis had been withheld in that case, in his opinion, from what he knew now, the man might have been living to-day. The man who hastened to give a fatal prognosis did not thoroughly comprehend the influence of mind over organisms. He did not fully comprehend the influence of the higher psychic centres over the lower centres of metabolism, upward or downward. True therapeutics depended upon exalting the metabolisms of the organism and not in depressing them. Not enough attention was given from a psychotherapeutic standpoint, and from a neurotherapeutic point of view, to taking care of the isolated nerve centres of the tuberculous patient, and in order to accomplish that, his digestion must be aided by continuous and unremitting superdigestion, artificially enforced, and an amount of sleep adequately secured.

Pulmonary Tuberculosis and Syphilis, with Brief Reports of Three Cases.—Dr. Robert H. Babcock, of Chicago, cited the views of different writers as to the mutual influence of the association of these two infections and showed that the effect of the second infection depended largely on the stage of the primary disease. He then narrated the salient points in three instances coming under his observation in the past year, in all of which syphilis was developed in the late stage of pulmonary tuberculosis with apparently a retarding effect on the tuberculosis.

His conclusions were as follows: 1. The effect of the association of pulmonary tuberculosis and syphilis seemed to depend largely upon the stage of the primary disease during which the second infection was acquired. 2. The acquisition of syphilis during the incipient or early period of tuberculosis appeared to be of a negative influence or even in some instances to exert a retarding or curative effect on the tuberculosis. 3. Syphilis acquired by a consumptive in an advanced stage was likely to aid the downward progress of the tuberculosis. 4. Tuberculosis when developed during the primary or secondary stage of syphilis offered a bad prognosis and was apt to run a rapid course. 5. When pulmonary tuberculosis developed during the third or late stage of syphilis, it was apt to pursue a slow course, probably because of the tendency of the lues to sclerosis during this stage. 6. The association of these two diseases did not preclude the mercurial treatment of the syphilis by intramuscular injections and inunctions, but iodine, if administered at all, must be used cautiously because of its tendency to hasten softening of the tuberculous foci. 7. During the antisyphilitic medication there should be no relaxation in the hygienic measures recognized as necessary in the management of the tuberculosis.

Preliminary Report of Cases Treated by Dr. Carl Spengler's Tuberculosis Immune Blood.—Dr. W. F. Woolston, of Chicago, stated in his paper that Dr. Spengler pointed out that in previously immunized patients, after an injection of an antigen, the following relative change in position of the stored up immune substances took place: In about half an hour the quantity of serum immune substances increased, with a decrease in the immune substances of the red blood cells; and in a few days the deficiency in red blood cells had again been balanced or overbalanced and the serum left deficient in these bodies. Dr. Spengler was of the opinion that the leucocytes played a part in the absorption of these bodies. It would be seen that he regarded the erythrocytes as the main source of the production of immune bodies. In healthy animals, after tuberculous poison had been injected, the immune bodies were demonstrable in the red blood cells. They appeared to be adherent to the hæmoglobin and could be separated chemically or mechanically.

He had not as yet been able always to say beforehand just which cases would improve. However, the acute miliary had shown the most striking results, as health had been regained in a comparatively short time. Some of the chronic cases had shown no improvement and two of them seemed to have old lesions stimulated to activity. Some of the untoward effects had been a diarrhœa, which had been easily controlled by some mild intestinal antiseptic. In a case of one nine year old patient a rash occurred after the first injection, which disappeared in from twenty-four to thirty-six hours. Among the earliest signs of improvement were the disappearance of lassitude, an improvement in the appetite, a decrease in the amount of sputum and number of bacilli, a gain in weight, an improvement in sleep, and a lowering of temperature and pulse. The toxic pulse, however, took more time to reduce, and sometimes heart stimulants were indicated to aid the myocardial power. The conclusions of writers who had used this tuberculosis immune blood serum were favorable as to its efficiency.

Prostatic Hypertrophy. — Dr. John E. Cannady, of Charleston, W. Va., in his paper stated that prostatic hypertrophy was the greatest curse of age in man. The chief indications for operative relief of obstruction were difficulty in urination and residual urine. He spoke of the value of bladder irrigation and the administration of urotropin and sodium benzoate. This combination was well borne by the stomach. Matters of diet and water drinking were of paramount importance. The choice of operation, whether suprapubic or perineal, depended largely on the individuality of the operator. The value of suprapubic cystotomy was pointed out. He spoke of Hunter McQuire's method and emphasized the necessity for rapid work. The popularity of the different methods was largely a matter of geography, like that of chloroform and ether. He spoke of the results of Freyer and Young, and pointed out the advantages of a nontoxic local anæsthetic, such as novocaine in doing a cystotomy. Only a brief general anæsthesia was necessary for the completion of the two stage operation. He spoke of the management of the patient before, between, and after the various steps of the operation. We should always bear in mind the conservation of the patient's strength. The two stage operation cut the danger in half. Normal saline irrigation was of great value. The final results were almost ideal in the average case, there being both anatomical and physiological restoration of urethra and bladder. He reported cases showing the management of the normal case.

The Interpretation of Jaundice.—Dr. CHARLES N. SMITH, of Toledo, O., gave an interpretation of jaundice as observed in gallstone disease and its associated conditions—the interpretation of a symptom which was infrequent, and, at best, indicative only of complications or terminal events.

Dr. J. H. CARSTENS, of Detroit, Mich., said that the common, every day catarrhal jaundice was of great importance. It was caused by gastroduodenal catarrh, so called. A patient would have jaundice and in the course of five or six weeks it would disappear, and whether treatment had any effect or not he had grave doubts. He had had this form of jaundice himself. He took everything his physicians told him to take—sweet oil, calomel, and many other things—but the jaundice continued. He then restricted his diet to nitrogenous food, and did not take any kind of carbohydrates, oils, fats, etc., but some good lean beef, some eggs, and water, and in a short time the jaundice disappeared.

Dr. R. N. MURRAY, of Flint, Mich., stated after suffering from jaundice for a considerable period of time and having tried various remedies, at the request of some Flint physician he took ammonium chloride in from ten to fifteen grain doses every two hours, and in four days the jaundice cleared up.

(*To be concluded.*)

Letters to the Editor.

PHYMATIASIS* (TUBERCULOSIS) AND BEDBUGS.

To the Editor:

In a European city there lived a widow who supported herself by letting lodgings. A young mechanic rented a room from her, lived in it for a time, became sick with phymatiasis, and died from this disease. A second young man then occupied the same room, and he likewise contracted phymatiasis and died from it. And so it happened with a third occupant of the fatal room. A physician who attended the last of these three persons, on hearing of the preceding cases, examined the room and found it infested with bedbugs. He made a microscopical examination of these vermin and found they were carriers of the bacillus of phymatiasis.

We read much about the fly as a carrier of disease germs, but very little is heard of the bedbug as a dangerous insect. For the presence of this syntrophos, as well as of another companion, the louse, there must be a *raison d'être.* It indicates unsanitary conditions, and the extermination of these insects is a most important matter, especially in houses that are being disinfected on account of contagious or infectious diseases. The ordinary general disinfection will not reach these foes.

In different papers I have called attention to the custom in English speaking countries of having dark bedrooms and of nailing the carpet to the floor. The public should be educated to abhor both these evils, as well as that of living in the basement. All these English institutions are contrary to modern hygienic principles. I have also demonstrated the relation of atonia gastrica, i. e., abdominal relaxation, to phymatiasis and the necessity of considering this condition as one of grave danger in many instances and as always of importance in regard to the treatment of phymatiasis.

Not only is the medical profession now alive to the importance and possibility of exterminating "tuberculosis" (barbarously so called), but worldwide efforts are now being made to arouse the general public to a like sense of this possibility and of the methods by which we may reasonably hope ultimately to effect it. But how can these hopes, these promises, be fulfilled, so long as the carpet is nailed to the floor, thus preventing cleanliness and affording a fortress in which germ conveying insects can impregnably entrench themselves; so long as millions of poor devils are deprived of light and air in their dark bedrooms; so long as bedbugs, lice, and other germ carriers are not exterminated as well as flies?

All these things, which I have brought before the profession from time to time through medical journals, as well as by means of a special circular addressed to the great Phymatiasis Congress at Washington, have been overlooked, and for this reason I beg to present my ideas before the board of health, the great, the noble institution of which the medical profession has a right to be proud.

A. ROSE, M. D.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Lectures on Surgical Nursing. By E. STANMORE BISHOP, F. R. C. S. Eng., Honorary Surgeon to Ancoats Hospital and Gynæcological Surgeon to the Jewish Memorial Hospital, Manchester, etc. Illustrated. New York: William Wood & Co., 1910. Pp. 143. (Price, $1.)

This is the age of specialties in medicine; not long ago we reviewed in these pages a pamphlet on nursing in eye, ear, nose, and throat diseases. Now we have a book on surgical nursing. The author treats, in twelve lectures, of the requisite education of a surgical nurse. He thus speaks of antisepsis and asepsis; sterilization; altruism, the great sine qua non of a good nurse; position of the patient; chart taking; baths; examination of the urine, fæces, and gastric contents; dressing of wounds; preparation of the patient for an operation; duties of nurses in the theatre; and duties of nurses during the recovery of the patient from anæsthetization.

Clinical Commentaries Deduced from the Morphology of the Human Body. By Professor ACHILLE DE GIOVANNI, Director of the General Medical Clinic, University of Padua. Translated from the Second Italian Edition by JOHN JOSEPH EYRE, M. R. C. P., L. R. C. S. I., D. P. H. Cambridge. Part General. New York: Rebman Company, 1910. Pp. xii-436. (Price, $4.50.)

Professor de Giovanni has for nearly forty years contributed to our store of medical knowledge and has held for a number of years the chair of clinical medicine in the University of Padua. His *Morfologia del corpo umano* appeared in 1891. In this book he emphasizes the dictum that the same disease in different patients may present different clinical appearances, as, for example, constitutional syphilis, of which disease the cutaneous manifestations prevail in one patient, in another the osseous, in another the hepatic, in another the cerebral. This can only be explained, according to our author, by the general and particular morphological knowledge of the diseased organ. This knowledge can be obtained solely by means of a new method of clinical observation, which begins at the bedside of the patient and ends at the anatomical table. To do this we must extend our knowledge of indications beyond the field of symptoms into that of facts, investigating the individual organic conditions according to the principles of general and special morphology. And this theory de Giovanni demonstrates in his book; he gives the methods of determining morphological value or type, which methods he then applies to the diseases. The translation seems to be well done; the contents are rendered into good idiomatic English.

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*So long as we physicians pride ourselves on being men of science we should aim at correctness in medical language and discard barbarisms like the New York Greek appendicitis and the Berlin Greek tuberculosis.

Die Fäzes des Menschen im normalen und krankhaften Zustande mit besonderer Berücksichtigung der klinischen Untersuchungsmethoden. Von Prof. Dr. AD. SCHMIDT, Direktor der medizinischen Klinik an der Universität, Halle, und Prof. Dr. J. STRASBURGER, Leiter der Ambulanz und der hydrotherapeutischen Abteilung der medizinischen Univ.-Klinik zu Bonn. Dritte, neu bearbeitete und erweiterte Auflage. Mit 15 lithographischen Tafeln und 16 Figuren im Text. Berlin: August Hirschwald, 1910. Pp. xi-427.

About seven years ago the first edition of this textbook appeared. It is now, as it was then, a very good work on the subject; many changes and alterations have been made in these three editions, giving always the latest addition to our knowledge of the fæces. The book is divided into five parts: microscopical, macroscopical, and chemical examination of the fæces, and the microorganisms and macroorganisms of the fæces. The strongest point in the book is the thorough description of the methods and technique of the many examinations.

Dermatologische Heilmittel (Pharmacopœia dermatologico). Dritte verbesserte Auflage. Von Dr. S. JESSNER. Würzburg: Curt Kabitzsch, 1910. Pp. 96.

Die innere Behandlung von Hautleiden. Von Dr. S JESSNER. Dritte Auflage. Würzburg: Curt Kabitzsch, 1910. Pp. 49.

These two pamphlets, Nos. 8 and 5 of Jessner's *Dermatological Lectures*, contain many valuable instructions and prescriptions for skin diseases, especially suitable for the general practitioner.

The Diseases of Women. A Handbook for Students and Practitioners. By J. BLAND-SUTTON, F. R. C. S. Eng., Surgeon to the Middlesex Hospital and Senior Surgeon to the Chelsea Hospital for Women, and ARTHUR E. GILES, M. D., B. Sc. Lond., F. R. C. S. Edin., Surgeon to the Chelsea Hospital for Women and Gynæcologist to the Tottenham Hospital. Sixth Edition. With 123 Illustrations. New York: Rebman Company, 1910. Pp. viii-554. (Price, $3.25.)

This is a very good manual on the diseases of women. It is of convenient size and contains all the information a general practitioner may look for. The advice given by the authors is good. Thus, in the chapter on hermaphrodites, we find this advice (p. 61): "When there is doubt as to the sex of the child, it should be named, trained, and educated as a boy." The frequency with which the uterus is perforated or torn while being examined or curetted has induced the authors to write a separate chapter XIX) on Injuries of the Uterus. Another interesting chapter is the thirty-fifth, the Vermiform Appendix as a Pelvic Organ; this is the only chapter which contains a list of reference books. There is no "literature" appended to the book, but a good index makes it a handy reference work.

MEDICOLITERARY NOTES.

A great many people are being disagreeably surprised at having their requests for opiates refused by apothecaries unless they present a duly signed prescription. This is due to the new local law on the subject. In many cases the patrons of some sedative mixture which they have been innocently taking for years learn for the first time of its containing opium. We hope the irony of fate has not numbered among these unwary people many antialcoholists. We are pained but not surprised to learn that many of the disappointed applicants for "dope" believe the law to have been drawn by physicians in order that narcotic victims may have to apply to them for prescriptions, to be roundly charged for.

* * *

Miss Valerie West is the young woman gazing pensively from the cover of the November *Cosmopolitan.* She looks like a victim of various diseases and will have to possess unusual mental attributes to enlist our sympathy in The Common Law, by Robert W. Chambers, of which she is the heroine. An antiexperimental physiology letter to the editor states that no good spirit would permit pain to be inflicted on one set of creatures by another set, thus at once ignoring the pain suffered by wild animals, the prey of others, and one of the most difficult questions in theology. If there is a fact in this world, it is pain, and there are not wanting many deep thinkers who believe it to be a salutary fact. There are violent assaults on Judge Hughes and the United States Army as well as on physiology.

* * *

The fiction of the October *Cosmopolitan* is good and attractive. Mabel Herbert Turner has one of her curious revelations of feminine psychology in Love, the story of a Sadistic gentleman and a Masochistic lady; Just Boy, by Paul West, is engaging, and The Steward, by Morgan Robertson, is worthy of the attention of all medical students of psychology, to say nothing of readers who like to laugh.

* * *

"Every physician is prone to exaggerate the inveterate nature of the disease which he has cured," wrote Gibbon in his immortal history, iii, 365. Well, Gibbon lived over a century ago and may have been unfortunate in his physician acquaintances.

* * *

The *Rosary Magazine* is disposed to attribute a very late religious origin to the expression *alma mater.* Still, the adjective is an extremely obvious qualification of the noun and was applied by Vergil and Ovid to nearly every goddess in the pagan calendar, perhaps because it is an easy trochee. Once the inevitable *mater* was applied to the university, *alma* would quickly gall her kibe.

* * *

A London clergyman recently told us that our slums were a Paradise compared with those of his own metropolis. All our residence districts are, as a rule, superior to those of similar style in London, as far as comfort and sanitary condition are concerned. We learn quickly and easily from Paris, Berlin, and other scientific centres and are ourselves prompt to originate, as well as actuated by a democratic spirit of humanity. It is not that the medical profession in Great Britain is in any way behind the times, but the British inertia, which they refer to as a wise conservatism, is difficult to combat. Moderate priced apartments in London are heated by the lessee with coal, and in many of the most magnificent country mansions a guest still lights himself to bed with a candle taken from the hall table.

* * *

The Briton's devotion to outdoor sport enables him to put up with his comfortless lodging. Dr. Woods Hutchinson, in the November *Outing*, writes of The Real Danger of Athletics, and refers with admiration to the British attitude toward sports and games in the open air, not merely in childhood and in youth, but through all ages, down to the very end of life. Unlike baseball, cricket may be played well by middle aged men. Where, however, would the New Yorker play? We should have no objection to a party of elderly gentlemen practising at a wicket in the street before our door, but an uncomprehending policeman would be sure to urge them to "g'wan."

* * *

The article in the November *Delineator* that should most interest physicians with families is The Mania for "As Good As" by David Graham Phillips. It not only is a powerful indictment of snobbery on scientific grounds, but warns parents in moderate circumstances that it is no longer sufficient to leave children property; the latter must be taught to take care of it, for they will have to offer more than a passive resistance to the clever, educated, keen, and strong children of the present generation of immigrants. The editor of the *Delineator* asks the public's help in a project to enact nationwide laws for the protection of children, especially orphans.

* * *

Nature does not often furnish to distinguished fathers sons who make their mark, but it may be because a successful parent does everything in his power to save his son the drudgery he has himself undergone—a mistaken kindness. The son of Sir Thomas Browne, however, author of *Religio Medici*, not only was physician to Charles II, but earned high encomiums from that easy going monarch for his medical skill and for his courtierlike manners. He was also a great traveler and enough of a Greek scholar to translate the life of Themistocles from Plutarch for Dryden's edition. Nature bethought herself of her cruel regulation only in the third generation, and the grandson of Sir Thomas, again a physician, fellow of the Royal Society and of the Royal College of Physicians, not only was of most mediocre talents, but drank heavily and was killed by a fall from his horse when intoxicated. Two fortunes to spend and unlimited social prestige from birth were too much for him.

NEW PUBLICATIONS.

Bériel, L.—Eléments d'anatomie pathologique. Avec 232 figures dessinées par l'auteur. Paris: G. Steinheil, 1910. Pp. x-563.

Sternberg, Wilhelm.—Die Uebertreibungen der Abstinenz. Eine diätetische Studie für Mediziner und Nichtmediziner. 2. Auflage. Würzburg: Curt Kabitzsch, 1911. Pp. xiv-93. (Price, 2.40 M.)

Robin, Albert.—Thérapeutique usuelle du praticien. Paris: Vigot frères, 1910. Pp. xii-520.

Pringle, J. Hogarth.—Fractures and their Treatment. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xii-384. (Price, $5.50.)

Hawk, Philip B.—Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. Third Edition. Revised and Enlarged. With Two Full Page Plates of Absorption Spectra in Colors, Four Additional Full Page Color Plates, and One Hundred and Twenty-seven Figures, of which Twelve are in Colors. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xviii-440. (Price, $2.50.)

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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending October 28, 1910:

Cholera—Foreign.

Place.	Date.	Cases.	Deaths.
Arabia—Maskat	Sept. 21	12	10
Austria-Hungary	Sept. 23-Oct. 5	12	5
Austria-Hungary—Budapest	Sept. 25-Oct. 1	2	4
Austria-Hungary—Hungary, gen'l.	Sept. 25-Oct. 5	56	26
Austria-Hungary—Trieste	Oct. 16	1	
Austria-Hungary—Vienna	Sept. 18-24	2	
Denmark—Copenhagen	Sept. 27	1	
France—Marseilles	Oct. 5	1	
Germany—Marienburg	Sept. 19-Oct. 2	7	3
Germany—Sommerau	Sept. 22	1	1
India—Bombay	Sept. 14-20		3
India—Madras	Sept. 9-16		26
Italy—General	Oct. 17-22	139	100
Italy—Girgenti	Oct. 21	1	
Italy—Naples	Oct. 17-22	29	9
Italy—Palermo	Oct. 21	4	
Italy—Trapani	Oct. 21	1	
Japan—Kobe	Sept. 19-25	36	19
Java—Batavia	Sept. 4-10	12	7
Persia—Ardabil	July 31-Aug. 21		50
Persia—Chudja	Sept. 4	2	1
Persia—Enzeli	Aug. 19-21	3	3
Persia—Khorassan province—Badjuirian	Aug. 1-Sept. 4	2	1
Persia—Nir	Sept. 4		Present
Persia—Serab	Aug. 4-27		Present
Russia—General	Sept. 4-10	7,559	3,557
Russia—Akmolinsk, territory	Sept. 4-10	103	50
Russia—Astrakhan, government	Sept. 4-10	32	22
Russia—Baku, prefecture	Sept. 4-10	60	27
Russia—Baku, government	Sept. 4-10	68	49
Russia—Batum, territory	Sept. 4-10	12	5
Russia—Bessarabia, government	Sept. 4-10	11	5
Russia—Black Sea, government	Sept. 4-10	3	1
Russia—Cronstadt, city	Sept. 4-10	3	6
Russia—Daghestan, territory	Sept. 4-10	267	135
Russia—Don, territory	Sept. 4-10	401	175
Russia—Ekaterinoslaw, government	Sept. 4-10	370	188
Russia—Elisavetpol, government	Sept. 4-10	40	34
Russia—Erivan, government	Sept. 4-10	176	110
Russia—Iaroslaw, government	Sept. 4-10	82	47
Russia—Kars, territory	Sept. 4-10	60	26
Russia—Kazan, government	Sept. 4-10	21	6
Russia—Kertchienikale, prefecture	Sept. 4-10	1	
Russia—Kharkoff, government	Sept. 4-10	35	20
Russia—Kherson, government	Sept. 4-10	260	104
Russia—Kieff, government	Sept. 4-10	200	97
Russia—Koutais, government	Sept. 4-10	31	14
Russia—Kostroma, government	Sept. 4-10	43	11
Russia—Kouban, territory	Sept. 4-10	189	76
Russia—Koursk, government	Sept. 4-10	203	115
Russia—Livonia, government	Sept. 4-10	7	3
Russia—Moscow, government	Sept. 4-10	20	8
Russia—Minsk, government	Sept. 4-10	43	11
Russia—Moguilew, government	Sept. 4-10	13	7
Russia—Nijni-Novgorod, gov'ment	Sept. 4-10	71	35
Russia—Novgorod, government	Sept. 4-10	28	24
Russia—Nicolaïeff, prefecture	Sept. 4-10	17	8
Russia—Odessa, prefecture	Sept. 4-10	10	7
Russia—Olenetz, government	Sept. 4-10	9	4
Russia—Orel, government	Sept. 4-10	54	28
Russia—Orenburg, government	Sept. 4-10	413	206
Russia—Oural, territory	Sept. 4-10	54	42
Russia—Perm, government	Sept. 4-10	25	8
Russia—Podolia, government	Sept. 4-10	78	28
Russia—Poltava, government	Sept. 4-10	59	20
Russia—Pskow, government	Sept. 4-10	2	
Russia—Riazan, government	Sept. 4-10	116	57
Russia—Rostoff-on-Don, prefecture	Sept. 4-10	9	3
Russia—St. Petersburg, city	Sept. 4-10	369	115
Russia—St. Petersburg, government	Sept. 4-10	52	31
Russia—Samara, government	Sept. 4-10	784	383
Russia—Saratoff, government	Sept. 4-10	1,137	503
Russia—Semipalatinsk, territory	Sept. 4-10	11	4
Russia—Simbirsk, government	Sept. 4-10	357	189
Russia—Smolensk, government	Sept. 4-10	12	11
Russia—Stavropol, government	Sept. 4-10	81	36
Russia—Syr-Daria, territory	Sept. 4-10	5	
Russia—Tamboff, government	Sept. 4-10	315	148
Russia—Tauride, government	Sept. 4-10	80	33
Russia—Tchernigoff, government	Sept. 4-10	30	15
Russia—Terek, territory	Sept. 4-10	34	27
Russia—Tiflis, government	Sept. 4-10	141	31
Russia—Tomsk, government	Sept. 4-10	69	31
Russia—Transcaspien, territory	Sept. 4-10	5	3
Russia—Transbaikal, territory	Sept. 4-10	15	8
Russia—Tver, government	Sept. 4-10	5	1
Russia—Veronege, government	Sept. 4-10	289	121
Russia—Viatka, government	Sept. 4-10	13	8
Russia—Vitehsk, government	Sept. 4-10	15	12
Russia—Vologda, government	Sept. 4-10	20	15
Turkey—Bagdad	Oct. 24		Present
Turkey—Irakil	Sept. 25-Oct. 1	1	1
Turkey—Trebizond	Sept. 25-Oct. 1	166	98

Yellow Fever—Foreign.

Place.	Date.	Cases.	Deaths.
Brazil—Bahia	Aug. 20-26	14	10
Brazil—Manaos	Sept. 11-24	5	5
Ecuador—Duran	Sept. 16-30	1	
Ecuador—Guayaquil	Sept. 16-30	2	2
Mexico—Campeche	Oct. 9-15	2	

Plague—Foreign.

Place.	Date.	Cases.	Deaths.
Brazil—Bahia	Aug. 20-26	3	3
Ecuador—Babahoyo	Sept. 16-30	4	1
Ecuador—Duran	Sept. 16-30	1	
Ecuador—Guayaquil	Sept. 16-30	61	22
Great Britain—London	Oct. 18	1	
Great Britain—London	Oct. 19	1	1
India—Bombay	Sept. 14-20		11
India—Kurrachee	Sept. 3-17	27	24
India—Rangoon	Sept. 4-10		11
Russia—Odessa	Sept. 24-Oct. 1	8	4
Venezuela—Caracas	Oct. 20	1	1
Zanzibar	Sept. 1-14		1

Smallpox—United States.

Place.	Date.	Cases.	Deaths.
North Carolina—Beaufort County	Sept. 1-30	2	
North Carolina—Caldwell County	Sept. 1-30	1	
North Carolina—Cumberland Co.	Sept. 1-30	3	
North Carolina—Durham County	Sept. 1-30	2	
North Carolina—Franklin County	Sept. 1-30	12	
North Carolina—Martin County	Sept. 1-30	2	
North Carolina—Mitchell County	Sept. 1-30		Present
North Carolina—Pender County	Sept. 1-30	1	
North Carolina—Pitt County	Sept. 1-30	3	
North Carolina—Robeson County	Sept. 1-30	15	
North Carolina—Scotland County	Sept. 1-30	1	
North Carolina—Union County	Sept. 1-30	3	
Tennessee—Shelby County	Aug. 1-Sept. 30	6	
Tennessee—Memphis	Oct. 9-15	1	
Washington—Adams County	June 1-30	1	
Washington—Chehalis County	June 1-30	3	
Washington—Chelan County	June 1-30	1	
Washington—Everett	June 1-30	5	
Washington—Skagit County	July 1-31	2	
Washington—Spokane	June 1-30	14	
Washington—Spokane	July 1-31	4	
Washington—Tacoma	June 1-30	1	
Washington—Tacoma	July 1-31	1	
Washington—Tacoma	Aug. 1-31	3	
Washington—Thurston County	Aug. 1-31	1	
Washington—Whitman County	June 1-30	9	
Washington—Whitman County	July 1-31	4	
Washington—Yakima County	June 1-30	2	
Washington—Yakima County	July 1-31	2	
Washington—Yakima County	Aug. 1-31		1

Smallpox—Foreign.

Place.	Date.	Cases.	Deaths.
Belgium—Antwerp	Sept. 25-Oct. 1		1
Germany—General	Oct. 1	1	
India—Madras	Sept. 9-16		7
Mexico—Aguascalientes	Sept. 13-Oct. 8		12
Mexico—Mexico	Sept. 4-24		7
Mexico—San Luis Potosi	Sept. 1-Oct. 8	1	3
Persia—Teheran	June 21-Aug. 24		130
Russia—Riga	Sept. 19-Oct. 1	15	
Russia—St. Petersburg	Sept. 18-24	16	3
Spain—Barcelona	Sept. 26-Oct. 2		1
Spain—Seville	Sept. 1-30		1
Switzerland—Zurich, canton	Sept. 25-Oct. 1	4	
Zanzibar	Aug. 25-Sept. 14		8

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending October 26, 1910:

CARMICHAEL, D. A., Surgeon. Granted nineteen days' leave of absence from November 15, 1910.

CARTER, P. I., Acting Assistant Surgeon. Granted three days' leave of absence from October 16, 1910, under paragraph 210, Service Regulations.

FRICKS, L. D., Passed Assistant Surgeon. Granted one day's leave of absence, October 20, 1910.

FROST, W. H., Passed Assistant Surgeon. Granted seven days' leave of absence from October 18, 1910, under paragraph 191, Service Regulations; granted seven days' leave of absence from October 25, 1910.

GAHN, H., Pharmacist. Granted one day's leave of absence, October 15, 1910, under paragraph 210, Service Regulations.

LAVINDER, C. H., Passed Asssant Surgeon. Directed to proceed to Columbia, S. C., upon special temporary duty; granted one day's leave of absence, October 18, 1910, under paragraph 191, Service Regulations.

MCINTOSH, W. P., Surgeon. Granted twenty-one days' leave of absence from November 11, 1910.

MARSH, W. H., Acting Assistant Surgeon. Granted eleven days' leave of absence from October 29, 1910.

RIDLON, J. R., Assistant Surgeon. Relieved from duty on the United States Revenue Cutter *Manning* and directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty.

RUCKER, W. C., Passed Assistant Surgeon. Directed to proceed to New York, N. Y., Boston, Mass., Philadelphia, Pa., and Baltimore, Md., upon special temporary duty.

SCOTT, E. B., Pharmacist. Leave of absence for twenty-three days from October 17, 1910, amended to read twenty-three days from October 13, 1910.

STIMPSON, W. G., Surgeon. Directed to proceed to Delaware Breakwater (Quarantine), Delaware, upon special temporary duty.

TAPPAN, J. W., Acting Assistant Surgeon. Detailed to represent the Service at the meeting of the International Medical Association to be held in El Paso, Texas, October 27 to 29, 1910.

TRASK, J. W., Assistant Surgeon General. Granted two days' leave of absence from October 24, 1910.

WAKEFIELD, H. C., Acting Assistant Surgeon. Leave of absence granted for fourteen days from October 10, 1910, revoked; granted seven days' leave of absence from October 18, 1910, under paragraph 210, Service Regulations.

WERTENBAKER, C. P., Surgeon. Detailed to represent the Service at the annual meeting of the Association of Military Surgeons, to be held in Richmond, Va., November 1 to 4, 1910; leave of absence for four days from October 20, 1910, amended to read two days from October 20, 1910.

WILSON, J. G., Acting Assistant Surgeon. Granted twenty-one days' leave of absence from November 4, 1910.

YOUNG, G. B., Surgeon. Detailed to represent the Service at the annual meeting of the Association of Military Surgeons, to be held at Richmond, Va., November 1 to 4, 1910.

Resignation.

Pharmacist K. E. Shauwecker resigned, to take effect October 22, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending October 29, 1910:

DE LOFFRE, S. M., Captain, Medical Corps. Relieved from duty at Fort Bliss, Texas, in time to enable him to comply with this order and will proceed to San Francisco, California, and take the transport to sail for the Philippine Islands about January 5, 1911, for duty.

HOGAN, DAVID D., Lieutenant, Medical Reserve Corps. Granted leave of absence for one month, upon his relief from duty at Fort Schuyler, New York.

MANLY, CLARENCE J., Major, Medical Corps. Granted leave of absence for one month on a surgeon's certificate of disability.

PHELAN, HENRY DU R., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort De Russy, Honolulu, H. T., and will take the transport leaving Manila on April 15th.

TETRAULT, C. A., Lieutenant, Medical Reserve Corps. At expiration of his present leave of absence ordered to Fort Michie, N. Y., for duty.

The following officers are relieved from duty in the Philippine Islands and will sail from Manila to the United States on the dates named:

January 15, 1911: Captain W. H. Moncrief, Medical Corps; Captain P. H. Huntington, Medical Corps; Captain W. A. Powell, Medical Corps; Lieutenant George W. Daywalt, Medical Reserve Corps.

February 15, 1911: Captain H. D. Bloombergh, Medical Corps; Captain H. S. Purnell, Medical Corps; First Lieutenant J. A. Worthington, Medical Corps; Lieutenant J. C. Le Hardy, Medical Reserve Corps; Lieutenant H. F. Lincoln, Medical Reserve Corps.

March 15, 1911: Colonel William B. Davis, Medical Corps.

April 15, 1911: First Lieutenant H. M. Snyder, Medical Corps; Lieutenant E. W. Bayley, Medical Reserve Corps; Lieutenant J. C. Ballard, Medical Reserve Corps.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending October 29, 1910:

BROWNELL, C. D., Surgeon. Detached from the *North Dakota*, and ordered home to await orders; ordered to duty at the Naval Hospital, Las Animas, Colo.

CATHER, D. C., Passed Assistant Surgeon. Detached from the *Iowa* and ordered to the *Delaware*.

KELLEY, H. L., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from June 6, 1910.

LAWRENCE, H. F., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from September 21, 1910.

McDOWELL, R. W., Assistant Surgeon. Detached from the *Connecticut;* granted sick leave for two months when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

PLEADWELL, F. L., Surgeon. Detached from the bureau of medicine and surgery, Navy Department, Washington, D. C., and ordered to the *North Dakota*.

SHOOK, F. M., Passed Assistant Surgeon. Granted sick leave for one month when discharged from treatment at the Naval Medical School Hospital, Washington, D. C.

WHITMORE, G. B., Assistant Surgeon. Detached from the *Delaware* and ordered to the *Connecticut*.

Births, Marriages, and Deaths.

Born.

CONNOR.—In Fort Brady, Michigan, on Friday, October 21st, to Captain C. H. Connor, Medical Corps, United States Army, and Mrs. Connor, a son.

Married.

GOLDWAITE—MOORE.—In New York, on Saturday, October 22d, Dr. Henry Goldwaite and Miss Amanda Moore.

KAHN—GARFUNKEL.—In New York, on Sunday, October 30th, Dr. Julius Kahn and Miss Fannie Garfunkel.

Died.

ALLEN.—In New York, on Tuesday, October 25th, Dr. John E. Allen, aged sixty-three years.

BROTHERS.—In New York, on Thursday, October 13th, Dr. Abram Brothers, aged forty-nine years.

BUTLER.—In Rutland, Massachusetts, on Friday, October 14th, Dr. David P. Butler, aged thirty-seven years.

COCHRANE.—In Fairport, New York, on Saturday, October 22d, Dr. Royal E. Cochrane, aged sixty-seven years.

DILLABOUGH.—In Hamilton, Ontario, on Wednesday, October 26th, Dr. E. H. Dillabough, aged seventy-six years.

DUNCAN.—In Pawnee, Illinois, on Sunday, October 16th, Dr. James M. Duncan, aged forty-eight years.

EICHELBERGER.—In Emmitsburg, Pennsylvania, on Wednesday, October 19th, Dr. Charles Dix Eichelberger aged seventy-five years.

GRAY.—In Laporte, Indiana, on Friday, October 21st, Dr. J. Lucius Gray, aged fifty-one years.

HAMILL.—In Chatham, New Jersey, on Saturday, October 29th, Dr. Edward Holman Hamill, aged sixty-seven years.

HAMMOND.—In Wellsville, Ohio, on Saturday, October 15th, Dr. J. W. Hammond, aged seventy-nine years.

JOHNSON.—In Franklin, West Virginia, on Thursday, October 20th, Dr. Isaac C. Johnson, aged sixty-three years.

JOHNSON.—In Greene, New York, on Wednesday, October 19th, Dr. L. M. Johnson, aged eighty years.

LANE.—In Norfolk, Virginia, on Wednesday, October 19th, Dr. Thomas B. Lane, aged seventy-one years.

LEFFLER.—In Millersburg, Pennsylvania, on Sunday, October 16th, Dr. E. H. Leffler, aged fifty-nine years.

LOCKHEAD.—In White Plains, New York, on Monday, October 24th, Dr. Harry B. Lockhead, aged thirty-five years.

MATERRE.—In Belle Rose, Louisiana, on Sunday, October 23d, Dr. Joseph Louis Materre, aged eighty years.

POST.—In Rochester, New York, on Tuesday, October 25th, Dr. George S. Post.

ROUSE.—In Paintersville, Ohio, on Tuesday, October 18th, Dr. W. L. Rouse.

SCOTT.—In Somerset, Kentucky, on Wednesday, October 26th, Dr. W. F. Scott.

STENGEL.—In Liberty, New York, on Sunday, October 23d, Dr. Caroline M. Stengel.

TANNER.—In Middletown, Connecticut, on Tuesday, October 25th, Dr. A. J. Tanner.

VAN BUSKIRK.—In New York, on Sunday, October 30th, Dr. W. B. Van Buskirk, aged seventy years.

WIGGIN.—In Atlantic City, New Jersey, on Friday, October 28th, Dr. Frederick Holme Wiggin, aged fifty-seven years.

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Original Communications.

CONCERNING THE SOURCES OF INFECTION IN CASES OF VENEREAL DISEASES IN THE CITY OF NEW YORK.

By FREDERICK BIERHOFF, M. D.,
New York.

In view of the storm of protest, which the passage of the new law providing for the medical examination of prostitutes, after conviction, has aroused in certain circles in this city, it may not be amiss to draw attention to the very active part played, by these individuals, in the dissemination of venereal diseases.

Paragraph 79, of the new laws, provides for the medical examination, by *women physicians* of the department of health, of all females *convicted* of prostitution, or soliciting, and the commitment of prisoners of this class, who may be found to be afflicted "with any venereal disease, which is contagious, infectious, or communicable, to a public hospital having a ward or wards for the treatment of the disease with which she is afflicted, for detention and treatment for a minimum period fixed by him in the commitment and for a maximum period of not more than one year; provided, that in case a prisoner so committed to any institution shall be cured of her venereal disease, which is contagious, infectious, or communicable, after the expiration of the minimum period and before the maximum period for which she has been committed to such institution, she shall be discharged and released from custody upon the written order of the officer in charge of the institution to which she was committed, upon the certificate of a physician of such institution or of the department of health that the prisoner is free of any venereal disease which is contagious, infectious, or communicable. If, however, such prisoner shall be cured prior to the expiration of the minimum period for which she was committed she shall be forthwith transferred to the workhouse and discharged at the expiration of said minimum period, etc."

So reads that portion of the law which has been opposed most bitterly by the upholders of the rights of the individual, as against the rights of the community.

The question of the legality of the new law does not come within the scope of the present article. That belongs to the lawyers. Its advisability from the point of view of the moralist is also beyond the scope of this paper. Whether more is to be gained, for the good of the community, by denying the existence of the "social evil," and by assuming a hypocritical air of being more moral than our neighbors, than by frankly admitting its existence and the growth of its pernicious influence upon the public health, and by an attempt to limit,—even if only in small measure—the spread of the diseases resulting therefrom, is a question for our economists.

The question to which the physician must address himself primarily is the question of health. As a physician, therefore, I shall discuss this matter solely in so far as it bears upon the health of the community.

Surely no good can come to the community from the deliberate distortions of facts by the opponents of this measure and their supporters in the shape of certain misinformed, or prejudiced newspapers, concerning the "social evil" and the evils which follow in its train.

With the object in view, of obtaining accurate and reliable data concerning the part played by the public prostitute, in the spreading of venereal diseases, in this city, I have, for some years past, kept records of the sources of infection, in such cases as could *definitely* remember the source of the infection. How great a part this individual plays, may be seen from a study of the figures contained in this article.

With regard to statistics concerning the sources of infection, in cases of venereal disease, it may be advanced that these must be unreliable, and, therefore, valueless.

This does not necessarily follow. The female prostitute, cohabiting with a number of men in quick succession, cannot trace the source of her disease. The woman who has intercourse with but one man, can easily do so. In the male, it is possible, in by far the large majority of cases, to accurately fix the date of the infection, and the source. This is particularly true in the case of first infections. The only possible value of such statistics, which I have had in mind, has been to get some idea concerning the proportion of the infections which were due to public prostitutes. Unfortunately, my dispensary material has been almost exclusively confined to cases of gonorrhœa.

The private patients have, with but isolated exceptions, all belonged to the educated, and better situated classes. The dispensary material has been obtained from three different localities, in this city, all of them widely separated.

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SOURCES OF INFECTION.

In 1,429 cases of gonorrhœa, in which the diagnosis was based upon the finding of the gonococcus.

	First infection	Later infection	Total
Puella publica (street)	213	273	486
Puella publica (brothel)	166	273	439
Puella publica (kept)	9	52	61
Puella publica (unclassified)	6	18	24
Puella publica ("friend")	20	22	42
Puella publica ("mistress")	4	..	4
Wives (who infected their own husbands)	20	25	45
Married women and widows	6	38	44
Divorcées	1	8	9
Fiancée	1	..	1
Working women and servants	70	166	236
"Respectable" (living with parents)	7	25	32
School girl	2	1	3
Sexual perversions	2	1	3
	527	902	1,429

CASES TREATED IN PRIVATE,

To September 1, 1910.

	First infection	Later infection	Total
Puella publica (street)	30	69	99
Puella publica (brothel)	42	149	191
Puella publica ("kept")	8	48	56
Puella publica (unclassified)	6	18	24
Wives (who infected their husbands)	5	9	14
Married women	1	26	27
Widows (one infected a boy of eleven years)	2	3	5
Divorcées	1	8	9
School girl (twelve and a half years old; infected boy of same age)	1	..	1
"Respectable" (living with parents)	4	22	26
Working women:			
Actress	3	53	56
Servant	2	3	5
Shop girl	1	8	9
Factory girl	1	..	1
Stenographer	1	6	7
Hair dresser	1	..	1
Manicure	..	3	3
Authoress	..	2	2
Trained Nurse	..	3	3
Buyer	..	4	4
Private secretary	..	2	2
Cloak model	..	3	3
Artists' model	..	2	2
Milliner	..	5	5
Seamstress	..	3	3
Business woman	..	1	1
Cashier	..	1	1
Companion	..	1	1
Waitress	..	1	1
Unclassified	7	9	16
	116	462	578

CASES TREATED IN THE GERMAN HOSPITAL DISPENSARY

At its old location, Second avenue, between Eighth and Ninth streets to March 31, 1906 (Class of Dr. Bierhoff).

	First infection	Later infection	Total
Puella publica (street)	64	61	125
Puella publica (brothel)	48	60	108
Wives (who infected their own husbands)	8	6	14
Married women and widows	..	4	4
Working women:			
Servant	..	3	3
Waitresses and barmaids	2	3	5
Unclassified	5	5	10
School girl (fourteen years, infected boy of twelve)	1	..	1
Pæderast (infected boy of sixteen and a half)	1	..	1
	129	142	271

CASES IN THE GERMAN HOSPITAL DISPENSARY,

New location, Park avenue and Seventy-sixth street, from March 18, 1907, to December 31, 1909.

	First infection	Later infection	Total
Puella publica (street)	72	73	145
Puella publica (brothel)	64	54	118
Puella publica (kept)	1	4	5
Wives (who infected their own husbands)	3	3	6
Married women	1	1	2
Widows	1	..	1
"Respectable" (living with parents)	1	..	1
Working women:			
Servant	13	8	21
Housekeeper	..	1	1
Janitress	1	1	2
Dressmaker	2	1	3
Saleswoman	2	2	4
Milliner	1	..	1
Waitress	1	..	1
Barmaid	1	..	1
Factory girl	2	3	5
Unclassified	2	2	4
	168	153	321

WEST SIDE GERMAN DISPENSARY,

Class of Dr. Bierhoff, from January 1, 1908, to December 31, 1909.

	First infection	Later infection	Total
Puella publica (street)	47	70	117
Puella publica (brothel)	12	10	22
"Friend"	20	22	42
"Mistress"	4	..	4
Wives (who infected their husbands)	4	7	11
Married women	1	3	4
Widow	..	1	1
School girl	..	1	1
Fiancée	1	..	1
"Respectable" (living with parents)	2	3	5
Working women:			
Servant	11	21	32
Shop girl	8	4	12
Factory girl	1	..	1
Chaperone	..	1	1
Chorus girl	1	1	2
Stenographer	1	..	1
Pæderasty	1	..	1
Coïtus per os	..	1	1
	114	145	259

Of 1,429 cases of gonorrhœa, then, in which the source of the infection was definitely known to the patients, the infections from women who might be termed "public prostitutes," were as follows:

Puella publica (street)	486
Puella publica (brothel)	439
Puella publica ("kept"; infected men other than their lovers)	61
Puella publica ("friends," cohabiting promiscuously)	42
Puella publica ("mistress," cohabiting promiscuously)	4
Puella publica (unclassified)	24
	1,056 (74— per cent.)

Of the balance, almost all might be termed "clandestine" prostitutes.

The argument might be advanced that, in the case of patients suffering with an infection later than the first, there might be only a recrudescence of a former infection. Let us, therefore, consider the first infections, in which this possibility can be excluded. They numbered 527.

The number of infections from prostitutes was:

Puella publica (street)	213
Puella publica (brothel)	166
Puella publica ("kept")	9
Puella publica ("friend")	20
Puella publica ("mistress")	4
Puella publica (unclassified)	6
	418 (79+ per cent.)

As only those cases in which gonococci were found by the microscope, in addition to the usual clinical symptoms, and in which the patient could definitely remember the source and date of the infection, have been included in these statistics, they may be assumed to be exact. In almost every instance the case has come under my own observation; in the others under that of one of my own assistants, properly equipped to make an exact diagnosis.

In the first category of prostitutes we included only those women who "picked up" the men on the streets, or in saloons, dance halls, theatres, and the like, and took them to their rooms or to places of assignation. In the second, those who received visitors in brothels, or prostitution apartments; in the third and fifth, those who, while ostensibly the mistresses of certain men, received the visits of other men, for pay. In the fourth, those who were not wholly "kept" by the men in question, but who accepted money, or its equivalent, from them. In the last, those of whom we could not be sure as to which of the other classes they belonged in, but who accepted money for the act of coitus with a strange man.

If, now, we consider the different tables, we shall find whether or not there is a marked difference in the percentage of the infections through prostitutes, in different parts of the city. In order to do this, we may consider only the figures obtained in the different dispensaries, whose material was drawn largely from the locality in which the institution is situated.

Thus, in its old location, at Second Avenue and Eighth Street, the German Hospital Dispensary drew its material, in the main, from among the Germans, Russians, and Poles of that district. In its present location, few of the former patients seek it, and its material is drawn, in the main, from among the Germans, Austrians, Hungarians, Bohemians, etc., of the upper and middle East Side. The West Side German Dispensary, however, is patronized chiefly by the whites and negroes of the middle West Side, including a part of the "Tenderloin" district.

Of the infections among the cases seen in the German Hospital Dispensary, in its old location, the source was:

Puella publica (street) in	125	
Puella publica (brothel) in	108	
	233	(86 per cent.)

In the new location, it was:

Puella publica (street) in	145	
Puella publica (brothel) in	118	
Puella publica ("kept") in	5	
	268	(83+ per cent.)

In the West Side German Dispensary, it was:

Puella publica (street) in	117	
Puella publica (brothel) in	22	
	139	(53+ per cent.)

To these last, however, should be added:

"Friends" (who infected their "lovers") in	42	
"Mistresses" (who infected their "lovers") in	4	
	46	
	139	
	185	(71+ per cent.)

In the patients infected by prostitutes seen in the writer's private practice—most of whom were infected by women living in the heart of the city, but particularly in the "Tenderloin" district—the source of infection was:

Puella publica (street)	99	
Puella publica (brothel)	191	
Puella publica ("kept")	56	
Puella publica (unclassified)	24	
	370	(64+ per cent.)
If to these we add the prostitutes who pose as actresses	42	
We shall have	412	(71+ per cent.)

To recapitulate:

Of a total of 1,429 cases of gonorrhœa, the infection was by public prostitutes, in	1,056	(74— per cent.)
Of a total of 527 first infections, in	418	(79+ per cent.)
In the German Hospital Dispensary, old location, of a total of 271, in	233	(86 per cent.)
In the same institution, in the new location, of a total of 321, in	286	(83+ per cent.)
In the West Side German Dispensary, of a total of 259, in	185	(71+ per cent.)

These percentages differ a little from those in my previous tables (published in the *Zeitschrift für die Bekämpfung der Geschlechtskrankheiten*), which decrease I believe to be due to the fact that, owing to greater police pressure, of late, many prostitutes now pose as working women, widows, etc.

It is also of interest to note that, while the majority of the private patients who were infected by public prostitutes, were infected in brothels (191 out of 370), the dispensary patients were, in the majority of cases (387 out of 686) infected by women whom they had "picked up" on the street.

In addition to the cases of gonorrhœa investigated, in the West Side German Dispensary, there were fifty-two cases of syphilis treated in the writer's division. In these, the source of infection was:

Puella publica (street), in	30
Puella publica (brothel), in	3
"Friend," in	1
Wife, in	1
Working woman:	
Servant, in	2
Factory girl, in	1
Laundress, in	1
Chaperone, in	1
Unknown source, in	12
	52

It is safe to assume that a large part of the last mentioned "unknown" class were prostitutes.

Let us, now, compare the statistics published in 1866, by Fournier, of Paris, with those which I gathered in 1899-1900, from among the patients of the Allgemeine Poliklinik, in Berlin, and those presented in this article:

	Fournier, Paris, 1866	Bierhoff, Berlin, 1899-1900	Bierhoff, New York, 1910
Prostitutes, public	12	87	1,056
Prostitutes, clandestine	44	..	
Mistresses, actresses	138	..	Mistresses 4[1] Actresses 57[2]
Working women	126	26	236
Servants	41	9	61[3]
Married women	26	..	45[4]
Financées, married women, widows, and divorcées	..	10	54
"Respectables"	..	..	32
School girls	..	..	3
	387	132	1,426[5]

[1] Under prostitutes.
[2] Under working women.
[3] Classed under "working women."
[4] Own "wives."
[5] The cases due to sexual perversions are not here included.

It will be seen, at a glance, how small a rôle the public prostitute plays, in Fournier's statistics, as a source of the gonorrhœal infection, when compared with those obtained by me, both in Berlin and New York. Of the eighty-seven public prostitutes, in Berlin, who were the source of the infection, it may be added that *only five* were under "control."

Are we not justified, then, upon the basis of my statistics, in assuming that *the public prostitute is, in this city, by far the most prolific disseminator of venereal disease?*

10 West Sixty-first Street.

GROSS DRUGS VS. ACTIVE PRINCIPLES.

By George F. Butler, A. M., M. D.,
Chicago,

Professor and Head of Department of Therapeutics and Professor of Preventive and Clinical Medicine, Chicago College of Medicine and Surgery (Medical Department of Valparaiso University, etc.) Author of *Butler's Materia Medica*, etc.

It is not from official quarters that true progress always arises. There are "stand patters" in medicine as in politics, men who, by their conservatism oftentimes actually retard true progress, even going so far as to ridicule those who differ with them regarding the efficacy of certain therapeutic methods or the remedial value of a certain drug.

In all periods of human history, the inventors, the reformers, the "progressives" have been ignored, belittled, ridiculed, or persecuted by the so called "authorities."

It is to the credit, however, of medical men in general that they refuse to part with their independence, their liberty of examination, their right of review without which the physician is no more than the slave of the profession.

Despite the indifference, the skepticism even, manifested toward therapeutics by some of our great surgeons and diagnosticians, and despite the strenuous opposition of certain "pharmacist doctors," or, more properly speaking, "pharmacist pharmacologists," to the use of any remedies not bearing the "authoritative" seal, many physicians have fearlessly and publicly stated that it is our duty to do all in our power to relieve or cure our patients *by any means whatsoever* and not leave them to God, Nature, and themselves after we have made a diagnosis. Many of us believe with Amédée Latour, that without therapeutics the physician is no more than a sort of naturalist whose appropriate place might well be found in a museum of natural curiosities, but certainly that it is not at the bedside of a patient.

Moreover there are many progressive physicians (and no man is a true physician who is not a good and enthusiastic therapeutist) who would not hesitate to abandon the "rut" in which, for a longer or shorter period, he had faithfully labored, if he were convinced that there was a better method of treatment, nor to refuse to employ any drug or remedy whatsoever, and in any sized dose, any method of treatment whatsoever, whether hydrotherapy, psychotherapy, electrotherapy, mechanotherapy, etc., regardless of the opinion or opposition of any or all members of any council, or any "editor," "author," "professor," or just mere "doctor" provided he was thoroughly convinced by clinical experience that such drug or method of treatment surpassed any other in results obtained.

The time is not far distant, if, indeed, it has not already arrived, when patients will understand upon which side progress rests; in reality the patients constitute the court of last resort; they are sovereign. The person who is ill asks but one thing, to be relieved or cured; and the more quickly this is done the better. He cares very little whether he is cured by this method or that method; the acrimonious discussions of regulars and irregulars are to him matters of profound indifference. But his intelligence and a good sense counsel him to remain ill the shortest possible time, and if a physician knows of any treatment offering greater celerity and greater certainty than that of any other it is his duty to employ it, and if the patient knows of it he will demand it and he will obtain it.

There are many progressive physicians in the United States, and the number is increasing daily, who believe in therapeutics, who endeavor to do something for their patients, and who realize fully that there is a growing demand by the people for a physician who can relieve or cure his patients—*tuto, cito, et jucunde.*

It is my firm belief that true and efficient drug therapeutics is impossible with the preparations ordinarily used—the classic galenicals and the innumerable specialties.

Is it any wonder that patients are disgusted with, and that doctors are losing faith in the gross, nauseating assemblage of inert, alterable, unreliable, and often incompatible mixtures prescribed for the sick? Where can be found a physician save in the ranks of the "stand patters," who will proclaim that he can obtain positive effects with these mixtures, and that they are preferable to the alkaloids; preferable to the active principles of plants which are pure, free from all admixture, and of a definite chemical composition?

Is it indeed the case that the healing art possesses something in common with the art which consists in being able to make such mixtures as are offered to the medical profession? Is it not, on the contrary, an indication of progress when physicians are substituting the active principles for the unreliable galenicals, having come to know by experience that they are far more reliable, certain, and efficacious? Therapeutics does not consist in the art of composing long formulæ which are usually of no remedial value, if, indeed, they do not give rise by their incompatibility to further complications.

Active principle therapy is therapy in action; it is the therapy that will relieve or cure our patients; it is the tomb of both galenicals and specialties; it represents the rehabilitation of the true medicament, conscientiously prepared, simple, active, always the same, and perfectly soluble.

I am amazed that there are physicians to-day who fail to see that in the proper use of active principles, we have a drug therapy that unquestionably has struck a blow at uncertain and nauseating bottled drugs and must ultimately end in their final abolition to the gehenna of classic medical crudities.

The alkaloids and active principles represent the really active, remedial part of the medicinal plants, free from all elements which may obstruct or annul their action. Hence, they are agents of absolute purity which should, and do, inspire confidence in the minds of those who use them.

In an article entitled Elements of Uncertainty in Therapeutics published in *Merck's Archives* for September I said in part:

> Every physician must admit that if it were possible we should be as certain of the reliability of the drugs that we administer to our patients as of the perfectly aseptic conditions of our hands and surgical instruments during an operation. Therapeutics can never perhaps be an exact science, but it should be our endeavor to eliminate every possible element of uncertainty. Assuming that the physician is familiar with the pathology and diagnosis of the disease he is treating, the principle element of uncertainty lies in the unreliable character of the preparations used.
>
> The failure to secure the desired effects of the drug is more frequently attributed to the drug itself than is generally known or credited. Either the remedy, and this is particularly the case with vegetable drugs, in its raw state although pure, is of an inferior grade, or if originally of good quality, it has through long storage lost its virtue. Possibly the drug has been adulterated, and not infrequently the medicine is modified in its efficiency by the method of its preparation. The activity of drugs may likewise be conditioned by their habitat. The respective commercial values of the different varieties of opium, aloes, colocynth, etc., are dependent on the countries from whence they are derived. The difference in the effects of different varieties is sometimes remarkable. While, for instance, one to two grains of Socotrine aloes is sufficient to bring about a free evacuation of the bowels, the same effect can scarcely be secured by a dose of Arabian or Mocha aloes of five times this amount. Many of our indigenous plants present similar variations. Thus, digitalis

growing wild on hills is much more active than that which is grown in the valleys or cultivated. Hemp as grown in this country does not furnish the hashish which is yielded by the hemp grown in warmer latitudes, and the hemlock which in this country yields conium, is devoid of the active principle when grown in Scotland. The nature of the soil, atmosphere, temperature, season of the year, etc., are all so many factors in determining variations in the activity of medicinal plants.

The importance of the latter factor is particularly noticeable in any of our more active plants, as has been fixed by a definite observation. We know that even the mountain digitalis, gathered in the mountain regions of central Germany differs in its pharmacological properties with the season of the year that the leaves are picked. It is most active when the plant is in full bloom and the acme of its vigor. The same is true of colchicum, it having been demonstrated by Schroff that the root and seeds which are gathered when the plant is in full bloom contain the largest portion of colchicine, and are the most active. The most marked instance of changes as regards the active principles of plants is furnished in the case of elaterium. The juice of this drug when collected in July yields from four to five per cent. of elaterine. That from the fruit gathered in August, yields about 0.69 per cent. While the juice of the plant picked in September is almost, if not entirely, destitute of this principle.

These facts explain the apparent contradictions in some of the older authors regarding the activity of medicinal doses of elaterium. Many drugs also undergo change through long storage, developing in some instances new and not infrequently deleterious properties, through drying and the oxidizing influence of the air. If, for instance, in the preparation of extract of hyoscyamus dried instead of recently gathered leaves are employed, the product will be found to contain scarcely any active principle, while the same quantity of fresh leaves will yield a decided proportion.

Ergot will lose its virtues unless carefully dried and sealed, but it is in the pomegranate root bark that the most decided changes in activity due to such causes are noticeable. While the freshly gathered root is a reliable anthelminthic, it is not only no longer active but becomes an irritant emetic and disturbs digestion when old.

Pilocarpus contains two principles, pilocarpine and jaborine, and if jaborine is in excess, which it not infrequently is, the effect will be the opposite to the one expected. We use pilocarpus for its diaphoretic action, but if a fluid extract of jaboranda containing an excess of jaborine is used we get an effect similar to that which would be produced by atropine. If pilocarpine were used there would be no uncertainty.

It is a well known fact that the various preparations of colchicum are uncertain at best, that some are not as good as others. Why not leave out of the materia medica the inferior ones? Would not this be the logical thing to do? But why use any of them when colchicine fully represents the drug and is absolutely certain in its effects?

Why not, indeed, omit from our materia medica entirely all mention of the various preparations of belladonna, cinchona, aconite, nux vomica, erythroxylon coca, pilocarpus, colchicum, hyoscyamus, and all other drugs where active principles fully represent them?

We rely with confidence upon hypodermic medication, and the majority of remedies used hypodermically are active principles. Where is the consistency in using a more reliable drug for hypodermic medication than we would give by mouth? If you use morphine and atropine, quinine and strychnine, why not use other active principles which as fully represent the medicinal value of the plants from which they are derived as do the alkaloids just mentioned?

The first qualities to seek for in a medicament are uniformity in strength and identity of action at all times. The active principles alone can fulfill these conditions; quinine, atropine, morphine, or strychnine will always be quinine, atropine, morphine, or strychnine. On the other hand, how many differences are always to be found in plants—differences which may vary, as I have said, in accordance with the age of their stalks, the vigor of their growth, the season in which they are gathered, and the quality of the soil or the character of the climate in which they are grown. It is, in fact, beyond dispute that the quality of medicinal plants varies in accordance with certain meteorological conditions, climate, culture, age, aeration, drouth, or humidity.

Let me now briefly refer again to the desiccation, extraction, pulverization, pulpation, infusion, and distillation which these plants undergo at the hands of the manufacturing pharmacist. Desiccation, in causing the evaporation of the water of the plant, favors the oxidizing action of the air which partly decomposes the substance of which it is composed. Extracts and tinctures, therefore, which may be manufactured from plants thus manipulated, are unworthy of our confidence. Even the alcohol used in such preparations reacts upon the immediate products of the plant. Infusions and decoctions will evidently vary in strength in proportion to the amount of time in the making or during which they have been subjected to the action of heat. Finally, we have the aqueous and alcoholic extracts, dry or fluid, which physicians so often confound in their prescriptions, and which are evidently of very variable activity, although efforts are made to standardize these preparations, which means that they are supposed to contain a certain percentage of alkaloid or active principle. Why not use the active principle alone, and be done with it? There are but very few drugs, indeed, from which the active principles have not been isolated. Rhubarb, ergot, and cannabis indica are invariably mentioned by the conservatives as drugs the medicinal value of which it is impossible to represent by any active principles thus far obtained from these drugs.

When it is impossible to procure the active principle of any drug, we must of course rely upon a well made galenical preparation from a first class specimen of crude drug. But we will have to rely upon a very few, only, of such preparations.

All pharmacists know how worthless many medicaments become after having been kept for a certain length of time; the leaves, flowers, seeds, stalks, and roots lose their color, odor, and taste, while they are constantly undergoing a process of slow decomposition, dating from the time they are removed from the natural conditions surrounding the living plant. Life consists in movement; immobility is death to plants, precisely as it is to human beings. The pharmacist, therefore, has imposed upon him the onerous duty of constantly renewing his vegetable preparations, and, as he will constantly be liable to neglect that duty, how many deceptions must necessarily and constantly be practised upon the physician? Well defined, fixed principles, such as the alkaloids, are of easy conservation, however, and their strength is at all times a matter of ready verification. This facility of verification renders illusory all attempts at the sophistication of the alkaloids; while, on the other hand, we all know how easy and how habitual it is to sophisticate powdered drugs, extracts, and tinctures.

A great advantage of active principle therapy is the facility with which these principles of plants may be administered to patients. Every one should know, indeed, how easy it is to administer to patients these essential principles of drugs, divested as they are of the mass of useless and nauseating material which is so difficult to take, and of which it is necessary to ingest such enormous quantities in order to gain a proper proportion of active substance. The little granules of the alkaloids, so soluble and so convenient to ingest, may well replace the large, hard pills—veritable bullets—and the nauseating, often inert, liquid preparations which patients so often, and to their advantage, refuse to take.

Where is the physician or even the student of medicine who has not many times witnessed refusals on the part of patients to swallow nasty mixtures, or made use of stratagems to avoid taking them?

There is always confusion and uncertainty in the action of complex medicaments, and all tinctures, fluid extracts, infusions, etc., are more or less complex in their nature.

Let me cite simply the tincture of opium, which, in practice, produces the most varied and contradictory effects. The study of opium has demonstrated that it contains several well defined principal alkaloids, all of which have properties of a decidedly different character. Narceine, morphine, and codeine are soporific, while papaverine, thebaine, and nicotine are of the nature of spasmodics. By using the isolated active principles of opium it is easily seen that the physician will attain with more certainty the end he desires, and he does so knowing that he may thus avoid the disagreeable and dangerous symptoms which are common consequences of the use of galenic preparations. A further consideration: How many of the inert components of plants are present in these polypharmaceutical preparations, and to what degree do they mask or contravene the operation of the active principle which they contain? And how large a quantity of foreign substances must we take into the stomach before we can introduce even a milligramme of really active substance? Before the discovery of quinine, how many, indeed, were the gastrites and enterites caused by the ingestion of enormous doses of cinchona bark? And how are we to discover, in these complex principles, the one which really acts? How can we distinguish, with certainty, even the symptoms of the disease, from the action of such complex medicaments?

I believe with Dr. R. E. Mason, who said in an address given some five or six years ago before the Mecklenburg County (N. C.) Medical Society, "that the use of the active principles is one of the greatest advances in medicine in recent years, because it is teaching men to think of the physiological action of drugs, to study the condition of the patient, and apply the drug that is indicated in doses sufficient to produce the desired effect, instead of using complex prescriptions whose physiological action they can only guess. The knowledge and confidence gained by their use make the physician dissatisfied with secret proprietary preparations, and, in this manner, is sounding the death knell of all such preparations, and is building up a class of thinking physicians who want to know the composition and action of the drugs they are asked to prescribe. Any physician who uses the galenicals when the active principle entirely represents the drug,—is as far behind the times as a physician who uses powdered cinchona bark for the quinine that is in it, for he is doing this very same thing when he uses any galenical for the active principle that is contained in it. Any pharmacist, however competent and careful he may be, is more liable to have a difference in strength in any two samples of the same galenical preparation he may make than he is to have them the *same* strength as they should be."

Had physicians used more of the active principles in the past, instead of the ill tasting, often inert or unreliable tinctures and fluid extracts, doubtless many drugs of vegetable origin would have been saved from the state of rejection as obsolete by the medical profession. I think that it will be admitted by every intelligent physician that we need more uniform and reliable preparations than we can get in the old fashioned galenical products. We owe it to our patients and to ourselves to prescribe none but the best preparations obtainable.

It is my belief, based upon an experience of twenty-two years in the active practice of medicine and thirteen years in the practice of pharmacy, that we have in the active principles infinitely more reliable, dependable, and efficient remedies than we have in any other preparations of vegetable drugs.

THE SERUM DIAGNOSIS OF SYPHILIS, USING THE NOGUCHI SYSTEM.

*Results in a Series of Cases.**

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In the serum test for syphilis announced by Wassermann, Neisser, and Bruck in 1906, using the original technique or the modification of Noguchi announced in 1909, we have a laboratory method by which from a few drops of blood active syphilis can be positively diagnosticated in a very large percentage of cases.

New and startling as this seemed to be it has already passed the experimental stage and become a demonstrated scientific fact.

The Noguchi modification rather than the original Wassermann reaction for the diagnosis of syphilis was selected because of its scientific and practical advantages. The reports of many disinterested authorities in this country in which the two methods were followed side by side on an aggregate of several thousand cases have confirmed the results originally obtained by Noguchi, showing that the modified method is at least as accurate as the original Wassermann. In addition it has many practical advantages even in a fully equipped laboratory. In the small clinical laboratory in connection with general and State hospitals, in the army and navy, and even in private practice it has brought good results where the older method could not possibly have been used. From the purely scientific and theoretical standpoint it possesses advantages through the use of an antihuman rather than an antisheep hæmolytic system, thereby avoiding the possible error due to the widely variable quantities of natural antisheep amboceptor in human sera. As far as antigen is concerned there can be no discussion, for it is settled that alcoholic extracts of certain normal tissues as well as from syphilitic fœtal liver contain the so called antigen, and that these bodies are in the aceton insoluble portions and keep best when so separated as Noguchi recommends. Therefore many who use the original Wassermann technique modify it in the matter of antigen. Those who use the Noguchi system can use the original antigen if they so desire. To be brief, the Noguchi system makes no sacrifice of accuracy and yet materially lessens tedious labor necessary in the older method with the most elaborate equipment, and puts the test within the range of the smaller laboratory, which through limited resources and equipment could not maintain the original Wassermann as a useful working method. Noguchi's idea of preserving the materials by drying on filter paper is of great practical utility and the fact that one may use active, inactive, or old serum as he prefers is of immense advantage when one is not devoting his entire time to such work.

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*Read at the fourth annual meeting of the Fifth District Branch of the Medical Society of the State of New York, Syracuse, N. Y., October 19, 1910.

After some preliminary work with material obtained through the kindness of Dr. Noguchi the cases herewith reported were tested with materials made in the laboratories of the College of Medicine. Three different preparations of antigen have been used, the first two from normal liver, and the last, the most active of the three, from the liver of a fœtus thought to be syphilitic although the pathological examination was not conclusive. These three antigens were prepared by the Noguchi method as he describes except for a slight modification with the last.

In evaporating the alcoholic tissue extract with an electric fan evaporation proceeds well until the point is reached when the fatty substances separate and mechanically greatly retard the evaporation of the small fluid residue, which is largely water. At this point we extracted and separated the ether soluble bodies with a small volume of ether, added a small amount of absolute alcohol to the watery residue from this preliminary ether extraction and then, under the fan, evaporation was completed in a few minutes. This final residue was then extracted with ether and the two extracts united. This considerably shortens the evaporation time.

The amboceptor was prepared by Dr. F. M. Meader, of the Department of Pathology and Bacteriology, and myself. We had no difficulty in obtaining strongly hæmolytic serum from our second rabbit. We modified the original method only in the manner of bleeding the rabbit, a large amount of blood being obtained very easily from the ear without any permanent injury to the animal, which is alive to-day.

Both antigen and amboceptor serum were dried on filter paper, titrated by Noguchi's method, and found satisfactory in every way.

Only fresh guineapig serum has been used for complement and the blood obtained by syringe puncture of the heart under ether when only a small amount was needed, thus saving the pig for another day; or by decapitation and full bleeding when more was required. No attempt has been made to use dried complement.

The corpuscle suspension was always made with corpuscles washed in a centrifuge. The precipitated corpuscles being so adjusted by dilution and trial that one, or two, capillary drops added directly to the tubes makes, with the final addition 1 c.c. of a 0.85 salt solution, the proper corpuscular suspension. I have classified the following 159 cases in groups with the idea of showing the value of the test in the ordinary clinical work.

GROUP I. *Nonsyphilitic.* Total, 52; positive, 0; negative, 52; per cent., positive 0. These fifty-two cases include: Carcinoma, 12; sarcoma, 2; lymphatic leuchæmia, 1; pernicious anæmia, 2; progressive muscular atrophy, 2; tetanus, 1; syphilophobia, 3; chancroid, 3; herpes preputii, 2; scarlet fever, convalescent, 5; tuberculosis, 5; other diseases, and normal, 14. These, with many negatives with normal sera used in titration of antigen are offered as proof of the good quality of antigen used.

GROUP II. *Primary Syphilis.* Total, 6; positive, 6; negative, 0; per cent., positive 100. None examined early, not all were positive at first test, all positive before secondary symptoms appeared.

GROUP III. *Secondary cases.* Total, 36; positive, 34; negative, 2; per cent., positive, 94.4. The two recorded negatives were both single examinations which could not be repeated. One, however, was finally obtained after three months' vigorous treatment had removed all clinical signs, and was again negative. Neither of these is justly chargeable against the test. Error in technique is a possibility. In neither case was our latest antigen used.

GROUP IV. *Active tertiary syphilis.* Total, 10; positive, 7; negative, 3; per cent., positive, 70. All negatives had had some treatment.

GROUP V. *Congenital syphilis.* Total, 5; positive, 5; negative, 0; per cent., positive, 100.

GROUP VI. *Cerebrospinal syphilis.* Total, 1; postive, 1; per cent., positive, 100.

GROUP VII. *Early latent undergoing treatment.* Total, 12; positive, 4; negative, 8; per cent., positive, 33. All negatives except one had had at least three months' treatment. One case only six weeks.

GROUP VIII. *Late latent..* No symptoms for one year or more, with insufficient or no treatment. Total, 3; positive, 2; negative, 1; per cent., positive, 66.

GROUP IX. *General paralysis.* Total, 2; positive, 2; negative, 0; per cent., positive, 100. Both cases were examined early before symptoms were typical. In one case syphilis was denied. Both now typical paresis.

GROUP X. *Tabes.* Total, 9; positive, 3; negative, 6; per cent., positive, 33. Mostly old chronic cases in institutions. One case reported as positive was negative before treatment with arsenobenzol and positive four days after the injection. This has been repeatedly observed under similar conditions in German clinics and is one of the remarkable effects of arsenobenzol. In the recorded cases the test again becomes negative after a short period.

Group XI. Cases thoroughly treated and clinically cured.

Case I. Three years' treatment, none for last six months. Reaction positive.

Case II. Two years' treatment. Patient wished to marry. Reaction positive. Subsequent history: Married against advice, wife has aborted twice, and he has had suspicious laryngeal symptoms; now again under treatment.

Case III. Nearly four years' treatment, mostly continuous; negative twice.

Case IV. Three years' thorough treatment; reaction negative.

Case V. Three years' treatment; none for two months. Reaction negative; six months later negative again, no treatment during the interval.

Case VI. About three years' treatment. Reaction negative twice.

Case VII. Two and a half years' treatment. Reaction negative twice.

Case VIII. Three years' thorough treatment. Small ulceration on tip of tongue. Reaction negative. Tongue ulcer healed promptly without specific medication.

Case IX. Initial lesion about five years ago. Treated thoroughly for two years. Now had small ulceration in scalp thought to be simple infection but it resisted ordinary treatment. Adjacent lymph nodes swollen and tender. Reaction positive. After six weeks' mixed treatment ulcer healed. Reaction negative. Treatment to be continued.

Case X. Two years' treatment by subcutaneous injection. No treatment for three months. Reaction negative. Test will be repeated after three months without treatment.

Group XII. *Cases for diagnosis.* Includes cases in which there remains doubt as to clinical diagnosis or in which test was against the clinical signs. Clinical diagnosis of physician in charge given in each case.

Case I. Clinical diagnosis, chancroid. Had had dorsal incision of prepuce. Nearly well. Reaction very strong positive. Two days later papular syphilide first observed.

Case II. Chancroid and gonorrhœal balanitis. Reaction very strong positive repeatedly. Two weeks later pronounced rash, laryngitis and faucal ulceration which yielded to specific medication.

Case III. Clinical diagnosis chancre of eyelid. No history except she was a cleaning woman in a house of ill fame. Reaction negative repeatedly. After six weeks' observation with no secondary symptoms and with ulceration spreading over eyelid clinical diagnosis changed to epithelioma. Under observation six months, ulceration checked at once by x ray and healed under silver nitrate. No secondary symptoms.

Case IV. Clinical diagnosis, probably syphilis, history incomplete. Reaction positive.

Case V. Clinical diagnosis, chancre of penis, typical. Reaction negative, six times in next three months. Never any secondary symptoms.

Case VI. Clinical diagnosis, chancre of tongue six months ago. Reaction negative. Watched carefully. No secondary symptoms. Three months later negative again.

Case VII. Clinical diagnosis, sore diagnosticated as chancre by another physician, two years ago. Little treatment. No definite history of secondary symptoms but was treated too soon. Reaction positive.

Case VIII. Clinical diagnosis, chancre or chancroid. Reaction negative. Now under observation. No eruption in two months.

Case IX. Clinical diagnosis, suspicious rash and history of sore throat. History negative. Reaction positive twice.

Case X. Clinical diagnosis, congenital syphilis suspected and confirmed by eye examination and x ray. Denied strongly. Reaction positive twice.

Case XI. Clinical diagnosis, suspect tertiary syphilis. Reaction negative.

Case XII. Clinical diagnosis, tertiary syphilis, positively denied. Reaction positive twice.

Case XIII. Clinical diagnosis, possibly syphilis from husband, or low vitality. Reaction negative. Will be repeated.

Although these cases are few to be used as a basis for positive conclusion regarding the clinical value of the test did they stand alone, they are so completely in accord with the practical experience in laboratories throughout the world covering thousands of cases that one is justified in making use of them.

The test is known to be positive in most cases of leprosy, a few cases of scarlatina at the height of the disease, frambœsia, sleeping sickness, in malaria during the paroxysm, and in lupus erythematosus. None of these diseases is hard to distinguish clinically, and most of them are rarely met with. Doubtless some of them can be excluded when a properly prepared antigen is used. The early reports of positives in ordinary diseases are now known to be due to faulty methods, old or improperly prepared antigen, and other difficulties to be expected with a new test dealing with perhaps the most elusive and complex bodies known to science.

With these few exceptions the test is specific. It is positive with remarkable regularity in active secondary cases. Negatives are but negatives however as in every other test or clinical sign. Many repetitions should be made before negatives are given any great significance when not in accord with the other clinical signs. While it would seem as though technical errors would account for almost all negatives in active untreated syphilis, yet we know that as in every other infectious disease there must be anomalous cases in which the specific antibodies are not present.

Primary cases usually give negatives early and are generally positive before the secondary eruption appears. Negatives should be repeated until well by the period of expected secondary symptoms. Active tertiary cases give more negatives than any other class of active syphilis, previous treatment being undoubtedly a factor in many of these. Congenital syphilis gives practically one hundred per cent. of positives. Brain syphilis and general paralysis usually give positives. Tabes probably gives nearly as high a percentage of positives in the acute stage, most of the negatives being in the old survivors in whom the infection has burned out.

Active treatment with mercury or arsenobenzol (Ehrlich-Hata) usually rapidly negatives the test and the effect lasts for several weeks after. The tendency in the past has been to under treat rather than over treat. Positives after thorough treatment are indication for further treatment as the disease is probably transmissible to offspring and the patient is in danger of parasyphilitic disease. Negatives after thorough treatment have no significance unless repeated at comparatively long intervals with no treatment during the period.

The test has been and is to be of great value in clearing up the ætiology of diseases in which syphilis has been suspected as a factor. It has been already demonstrated that syphilis is frequently overlooked, particularly when innocently acquired. On the other hand, just as malaria before the discovery of the plasmodium covered everything obscure from eyestrain headache to puerperal fever, syphilis has been blamed for things in which it has no part.

I am indebted to Dr. Hideyo Noguchi of the Rockefeller Institute for Medical Research for valuable instruction and assistance.

600 East Genesee Street.

FURTHER OBSERVATIONS ON THE USE OF THE EHRLICH-HATA PREPARATION "606" IN THE TREATMENT OF SYPHILIS.*

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(Concluded from page 903.)

I have now administered arsenobenzol in more than forty cases, the following series having been treated since the publication of the report by Dr. Nichols and myself in the *Journal of the American Medical Association*, October 1, 1910.

Case I. Male; æt. twenty-nine. Precocious malignant syphilis.

Initial lesion, March, 1909. Six weeks later ulcer of the throat which resulted in loss of the uvula. Examination on September 9, 1910, showed swelling and tenderness of the sacroiliac joints, gummatous bursitis over the left patella, ulcer over the bridge of the nose, scars on the thighs, forehead and scalp; thickening of head of left ulnar and a healed sinus leading to old bone disease. He was extremely cachectic and weighed only 105 pounds, the whole constituting a picture of malignant syphilis developing in the first year. There were also nervousness, pronounced tachycardia, and albuminuria. He had been under fairly active mercurial treatment by injections, inunctions, and internally, and had taken potassium iodide, which he bore badly.

On September 15th he received 0.4 gramme of 606. On September 16th a marked reaction developed which manifested itself by an accelerated pulse, as high as 130, some elevation of temperature, 100.6° F., malaise, and indefinite pains over the body. He was exceedingly nervous and feared he was going to die. His temperature during the time he was in the hospital fluctuated between 99° and 100.6° F. At the site of injection there was a marked swelling and tenderness. By September 20th his urine was free from albumin but no material change had taken place in the lesions. September 21st he left the hospital but was so weak that he was obliged to remain in bed, in his home, ten days longer, during which time he had some rise of temperature. An improvement was taking place, however, and by October 8th a marvelous change was apparent in the patient. The lesion over his nose was entirely healed, the sacroiliac lesions had regressed, and he had gained eight pounds in weight. The improvement now continued rapidly, and a week later he was scarcely recognizable so great had been the change in his physical and mental condition. Over five pounds more had been added to his weight, his appetite was ravenous, he was sleeping better, was less nervous than he had been in months, and the patellar bursitis was much reduced in size. There was still some tumefaction at the site of injection. Tachycardia and tremor still persisted and suggested the possibility of hyperthyreoidism. On October 22d the patient presented himself with a relapse. The external malleolus of the right foot and the metacarpal bones of his left hand were swollen and painful and on the left arm halfway between the wrist and elbow was a nodule the size of a small almond with a central area of necrosis. He was feeling well, however, and had continued to gain in weight, now weighing 121¼ pounds. His urine was negative. Treatment will be repeated in this case.

The serum reaction day of injection, September 15th, was + +; October 9th, + +; October 22d, + +.

Case II. Male; æt. thirty-six. Double optic neuritis and incipient tabes.

Initial lesion of the finger seven or eight years ago; condition not diagnosticated and secondaries overlooked. In August, 1909, patient noticed impairment of vision, but it was not until March, 1910 that he sought medical aid. At this time a diagnosis of optic neuritis was made and active antisyphilitic treatment instituted. His Wassermann reaction was positive. Ophthalmoscopic examination made by Dr. Casey A. Wood, of Chicago, on July 15th and August 31st showed gray atrophy of both optic nerves and a pronounced disseminated chorioretinitis of the luetic type. He was treated on September 19th with 0.4 gramme. His pulse and temperature remained normal but a marked swelling appeared at the site of injection; otherwise no symptoms of note. By October 3d the patient was of the opinion that his vision had improved some in that he was better able to distinguish objects. Dr. John E. Weeks made an ophthalmoscopic examination on October 5th and reported that there was a slight improvement over the condition found by Dr. Wood on August 31st.

Serological examination: September 19th before injection, + +; October 5th some decrease in intensity; October 22d, + +.

On October 27th the patient returned to New York for a second injection. He stated that his vision had improved, distant objects were more distinct, and his field of vision was larger. On that day 0.5 gramme, in alkaline solution, was injected into both gluteal regions. This was followed by severe pain which required morphine and was intermittent during the next three or four days. Serum reaction on November 4th, + +.

Case III. Male; æt. forty-two. Tabes.

Chancre twenty years ago followed by secondary skin and mucous membrane lesions. Insufficient treatment during the first year. He was free from symptoms until three and a half years ago when he became nervous, easily tired, and had pains in his legs which were thought rheumatic; there was also impairment of sexual power. During the past year he has had forty injections of enesol and chromium sulphate.

On September 21, 1910, marked tabetic symptoms were present; incoordination of the upper extremities as well as the lower; absence of knee jerks; pupillary reflexes responded but slightly to light and accommodation; numbness of the hands and feet. On September 29th he received an injection of 0.5 gramme. This was followed by severe pain extending down the right arm suggesting a neuritis. It lasted for ten days, necessitating the administration of several doses of morphine. The local reaction was not so marked as in some of the other cases; his temperature ranged between 98.5° and 100° F.; his pulse between 80 and 90.

Serum reaction; September 23d, +; October 20th, —. Patient is confident he can walk better. Now requires only the help of one person whereas before he could not walk unless supported on each side. The numbness in his hands he thinks is less. Too much weight must not be laid on this apparent improvement as it is a well known fact that tabetics change under the most varying influences.

Case IV. Male; æt. thirty-seven. Latent syphilis.

Infection in November, 1908, for which he was treated with mercury by inunction and by mouth for about one year. When referred to me for treatment he had no luetic manifestations but a strong Wassermann reaction. On September 19th he received an injection of 0.4 gramme. This was followed within ten minutes by considerable pain, becoming very severe and extending from the site of injection down the right arm and hand and continuing until the next morning. A slight rise in temperature and pulse rate followed on the second day, otherwise uneventful. By October 8th the patient had gained five pounds. His appetite was good and he felt well. A prominent swelling, however, was still present.

Serological examination: September 14th, + +; October 8th, +.

Case V. Male; æt. twenty-two. Meningomyelitis.

Primary lesion incurred three years ago and followed by secondaries, for which he was treated by inunctions and intramuscular injections. In July of this year some weakness and loss of control of the left leg developed attended by exaggerated knee jerks and Babinski. A diagnosis of meningomyelitis involving the lateral tracts was made by his physician, Dr. Haskell, of Bridgeport. The condition improved under large doses of mercury and potassium iodide in a week and in two weeks the leg was normal.

On September 23d he received an injection of 0.5 gramme. This was folowed by slight pain, no rise in temperature or pulse rate, but the usual local reaction appeared.

Serum reaction before treatment: September 16th, +; October 5th, +.

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*Read before the Harlem Medical Association, November 2, 1910.

CASE VI. Male; æt. thirty-five. Tertiary syphilis.

Chancre ten years ago followed by cutaneous and mucous membrane lesions. For six months he was treated with mercury internally. Nothing further developed until April, 1910, when an infiltration appeared in the roof of his mouth and on the septum and tip of his nose. For this he received mixed treatment. When seen September 24th he had ulcerative lesions on the tip of his nose and the septum. An injection of 0.6 gramme was given on that day. This was followed by considerable pain that night, the intensity reaching its maximum two days later. His pulse and temperature curve ran parallel, the latter not rising above 102° F., the former 100. The patient returned home at this time and was requested to send a specimen of his blood weekly for examination. One week after the injection the lesions were completely healed.

Serological examination on the day of treatment, September 24th was +. Specimen sent from the patient's home to Dr. Noguchi was reported by the latter October 20th as negative.

CASE VII. Physician, æt. thirty-five. Secondary syphilis with cachexia.

Infection of middle finger of left hand in November, 1907. Secondaries appeared six months after. He had had active and constant treatment since, but relapses continued and in June of this year a nephritis with puffiness of the eyes and headache at night developed.

Condition September 24, 1910. On the left leg a broken down cutaneous gumma; on the side of the nose a nodular lesion beginning to ulcerate. Patient was decidedly anæmic and had lost considerably in weight. Urine contained albumin, one half gramme to the litre (Esbach) and a few hyaline casts.

On September 28th an injection of 0.5 gramme was given. He had pain on the night following the injection, which disappeared the next day to reappear three days later; also swelling at the site of injection. His temperature did not rise above 99° F. On October 3d patient left the hospital. The lesion on his nose was almost healed; his general condition was much improved, and the amount of albumin in his urine about one half of that before treatment. Two days later the lesion on his leg was almost well. In two days more epidermization on the side of his nose was complete and on his leg there remained but a superficial ulcer the size of a dime. He was gaining in weight and the albumin disappeared from his urine.

Serum reaction: September 27th, ++; September 29th, the same; October 5th, +; report from Dr. Engman, October 10th, +, October 19th, weak +, October 23d, —.

CASE VIII. Woman, æt. thirty-nine. Grouped papular syphilide.

Time of infection not determined. Patient entered hospital for obscure symptoms and neuralgic pains in epigastric region and elevation of temperature. A serum reaction was made which was positive, and further examination revealed a grouped papular syphilide on the upper part of the chest and back. On October 6th 0.5 gramme was administered. Considerable pain followed the injection and continued for three or four days. The temperature was not above 100.2° F.

Serological examination: October 6th, +; October 12th, —; October 14th, the eruption had practically disappeared.

CASE IX. Male; æt. twenty-four. Secondary syphilis.

Chancre in March, 1910, followed by secondaries. He had had active treatment by mercurial injections and at present had no luetic manifestations, but wished to marry and was very desirous of abbreviating period of treatment by the usual remedies.

On October 5th he was given 0.6 gramme. There was very little pain and no increase in temperature or pulse rate.

Serological examination: August 31st, +; October 9th, +; October 12th, + slow.

CASE X. Physician; æt. thirty-five. Initial lesion with secondary eruption.

Seven weeks ago infected right forefinger while delivering woman of child with active palmar and plantar lesions. One week ago small papular syphilide on body and papuloerythematous lesions on the face and scalp. In the right axilla an enormously enlarged mass of lymph nodes. The patient was running a daily temperature and losing in weight.

The sclerosis consisted of a hypertrophic fungating lesion situated about the nail and was very painful. Extending from it was a marked lymphangeitis which could be followed up the posterior surface of the forearm as a hard thickened cord. On October 7th he received 0.6 gramme, followed by slight pain. On the day following an improvement was perceptible both in the eruption and lesion on the finger. By the second day the rash had faded fifty per cent. and the finger was less swollen and painful. One week after the injection the chancre was one half the original size, the adenopathy was reduced one half and the exanthem was almost gone. October 28th the chancre was healed and most of the surrounding infiltration had disappeared.

The serum reaction before treatment was +; October 21st, ++.

CASE XI. Physician, æt. forty-three. Initial lesion and secondaries.

Chancre of the thumb on July 15, 1910; three weeks ago secondaries. He had a generalized maculopapular eruption over the face, scalp, trunk, and extremities, and a specific pharyngitis. There were marked osteocopic pains at night, the patient had lost sixteen pounds in weight and suffered from profound mental depression, incapacitating him for his professional work. He had had seven injections of mercury. Examination of the thumb showed a deformed nail, loss of tissue, and redness. On October 8th he received 0.5 gramme followed by slight reaction. Two days later his throat and skin lesions were resolving and the pains in the tibiæ had decreased. By October 15th the eruption had almost disappeared, the pains had ceased, his mental condition had improved, and he had gained in weight.

Serum reaction: October 8th, ++; October 15th, ++.

A letter from his physician under date of October 22d reads as follows: "I saw Dr. ——— yesterday and I must say that amazement does not begin to express my feelings as the result of a careful examination of him. . . . He is feeling fine and almost every visible lesion has disappeared." A further report, dated November 3d, says that the serum reaction is now negative.

CASE XII. Male; æt. twenty-eight. Latent syphilis.

Lues, nine years ago. Had had treatment ever since with mercury and potassium iodide. He desired to marry and urgently requested treatment with the new remedy. On October 10th he received 0.5 gramme. This was attended by very slight pain and no increase in temperature or pulse rate. There was, however, the usual local reaction in the way of swelling.

Serum reaction before treatment weakly positive. After, October 22d, —.

CASE XIII. Male; æt. sixty-three. Secondary syphilis.

Eighteen months ago initial lesion of the left tonsil, followed in three months by middle ear trouble and iritis with a second attack of the latter seven months later. Examination October 1, 1910, revealed a relapsing papular eruption most marked on the flexor surface of the wrists and scattered lesions on the trunk, swelling of the tonsils which gave rise to severe paroxysmal cough, and adhesions of the left iris. On October 12th he was given an injection of 0.5 gramme. This was followed by considerable pain and a feeling of malaise; pulse and temperature remained normal. Three days after the injection the throat symptoms entirely disappeared and the skin lesions were less noticeable; the site of injection is still tender.

Serum reaction: October 1st, ++.

CASE XIV. Male; æt. fifty. Tabes.

No history of syphilis was obtainable. Symptoms of tabes appeared three years ago. On September 29, 1910, an injection of 0.6 gramme was given.

Serum reaction: September 29th, +.

CASE XV. Woman; æt. thirty-six. Tertiary syphilis.

Infected thirteen and a half years ago. A lip chancre developed which she traced to the dentist. Five weeks later secondary eruption and two months later sore throat. She was pregnant at the time of her infection and miscarried at seven months. During the succeeding years she had numerous outbreaks of gummata of the skin. Six years ago a pronounced gummatous infiltration of the lower third of the leg developed which had persisted ever since. Treatment had been inefficiently administered and carried out. This condition of the leg was followed by a pseudoelephantiasis of the foot and ankle. An injection of 0.5 gramme was given on October 12th. The result obtained was highly satisfactory as the infiltration was entirely absorbed, the elephantiasic condition disappeared, and the leg returned to practically its normal size.

Serum reaction before injection was strongly positive: October 16th, ++; October 22d, ++, October 30th, ++.

CASE XVI. Male; æt. twenty-one. Initial lesion.

Exposed September 21, 1910, one month later typical eroded chancre followed by inguinal adenopathy. On October 24th, 0.6 gramme was given. The patient returned to his home after forty-eight hours and was directed to send specimens of blood at regular intervals. The erosion was partially cicatrized but the induration persisted.

Serum reaction, October 24th, +.

CASE XVII. Male; æt. forty-four. Iridochoroiditis; nodular syphilide.

Chancre eleven years ago followed by secondaries. Internal treatment and injections for about two years; no treatment for nine years. One year ago an iridochoroiditis of the right eye developed. Ophthalmoscopic examination by Dr. A. E. Davis showed the left eye almost normal; V. 20/15. The right eye showed signs of an old iritis, one posterior synechia to capsule of the lens; a very extensive chorioiditis, the vitreous full of shreds and floating membranes, the optic nerve somewhat pale, and the field of vision contracted about one third at the periphery. V. 20/200. While most of the chorioidal changes were of old standing there were some fresh areas of inflammation. Four months ago a nodular syphilide developed over the left shin and there is now a lesion about five inches in diameter half way between the knee and ankle on the internal surface of the leg. On the outer side of the right foot a scaling syphilide is present.

On October 22d an injection of 0.6 gramme was given.

Serological examination: October 22d, ++. November 4th, ++. Improvement in skin and eye condition very marked.

The remedy was administered by me for Dr. Joseph Collins at the Neurological Institute in the following group of cases:

CASE XVIII. Male; æt. forty-three. Tabes (laryngeal crises).

Chancre twelve years ago, very little treatment until he entered the hospital when he had forty bichloride injections of 1/3 grain daily. Seven months ago present symptoms developed with dysphagia, regurgitation of food, and coughing and choking spells of severe intensity.

Physical signs: Knee jerks absent; pupils fixed, did not respond to light; vocal cords approximated poorly (paralytic or possibly ataxic).

On September 28th an injection of 0.5 gramme. Twenty days later no change.

Serum reaction before bichloride injections ++; before injection of 606 —; after —.

CASE XIX. Male; æt. twenty-five. Tabes.

Patient denied lues. Duration of present trouble, four months. Physical signs: Slight Romberg; limping ataxic gait; hypotonic legs; knee and ankle jerks absent. Anæsthesia and analgesia of the right foot.

On September 29, 1910, an injection of 0.5 gramme. This was followed by neither pain nor fever. Patient left the hospital October 5th with no change in his condition.

Serum reaction before treatment —.

CASE XX. Male; æt. forty-eight. Tabes.

Initial lesion ten years ago. Six weeks later maculopapular eruption and pharyngitis. Active treatment by mercury. Symptoms of tabes began three years ago. Present condition: Swayed slightly in Romberg; knee and ankle jerks absent; pupils dilated and respond normally.

October 15, 1910, 0.5 gramme was administered, followed by slight reaction and temperature of 100.4° F.

Serum reaction in September, 1909, —; September, 1910, +. Patient is still in bed and no change noted.

CASE XXI. Woman; æt. thirty-nine. Tabes.

No personal history. Husband contracted lues eight years before marriage. Present condition began five years ago since which time it has progressed. Physical signs: Swayed markedly in Romberg; could not stand unsupported even with the eyes open. Gait ataxic; knee jerks absent. On September 27th received 0.6 gramme. Followed by very little disturbance. The highest temperature was 100.4° F.

Serum reaction September 17th, +. October 15th, —. Her condition, however, is practically unchanged.

CASE XXII. Male; æt. thirty-seven. Tabes.

Contracted lues ten years ago, followed by secondaries, for which he had irregular mercurial and potassium iodide treatment. Present condition began four years ago. Swayed in Romberg; gait ataxic; right knee jerk almost gone. Right pupil fixed; left reacted slightly to light. No cells present in the spinal fluid.

September 27th an injection of 0.6 gramme was given. Reaction slight and afebrile.

Serological examination May 30th, +; October 10th, weakly +. The patient left the hospital feeling well, but there was no change in his general condition.

CASE XXIII. Male; æt. twenty-six. Spinal syphilis.

Denied lues. Present symptoms began six months ago. Physical signs: Left leg spastic, knee jerk greatly exaggerated; Babinski marked on this side; anæsthesia and hypalgesia in left leg. Ankle clonus. Right knee jerk also exaggerated.

An injection of 0.5 gramme was given on September 28th. When the patient left the hospital a few days later there seemed to be some slight amelioration of the sensory symptoms. The spastic phenomena, however, were unchanged.

Serum reaction: September 13th, +; September 29th, +; October 4th, + but less so than on previous examination.

CASE XXIV. Male; æt. forty-three. Metatarsal periostitis.

Lues six years ago. In 1906 periostitis of the right tibia; in 1910 of the left instep. Patient was treated by inunctions and hypodermic injections of mercury.

On October 5th he received 0.5 gramme. This was followed by slight reaction with a temperature of 100.4° F. One week after he left the hospital the swelling of his foot much reduced and much less painful.

Serological examination: September 30th, +.

CASE XXV. Woman; æt. thirty-four. Plantar syphilide. Infection eight years ago; had had routine treatment ever since. Present condition: On sole of left foot very sharply circumscribed lesions with polycyclic margins, as well as independent foci and fissures, the eruption being a typical scaling syphilis.

On October 11th she received 0.6 gramme. This was followed by very little discomfort and no elevation of temperature. On October 15th she left the hospital, the sensitiveness and swelling having entirely disappeared, the fissures being almost healed and the other lesions fast fading.

Serum reaction: October 11th, —; October 17th, —.

Of the cases previously reported by Dr. Nichols and myself five have been under observation and furnish the following additional data:

CASE XXVI. Male; City Hospital case. Mucous patches, pharyngitis and condylomata; 0.3 gramme on May 23, 1910; lesions disappeared in two weeks, Wassermann reaction negative in nineteen days. When seen on September 17th the patient had a recurrence of large moist papules on the scrotum, prepuce, and thighs; also on the soft palate and lips. He said he had been drinking heavily for three months and that he had been free from the eruption for one month after he left the hospital. His Wassermann reaction was ++ on September 22d. He was given a second injection at the hospital after which the lesions on the scrotum and penis healed, but those in the throat persisted.

CASE XXVII. Male; City Hospital case. Scaling syphilide of the palms. Treated May 16th with 0.3 gramme, lesions healed in one month, serum reaction negative after twenty-five days. He was discharged from the hospital June 18th but continued there as a helper until August 1st. During this time appeared a slight scaling spot on the palm of the left hand and he now has two irregular rounded areas, one the size of half a dollar, the other of a quarter, slightly fissured and suggestive in color of an eczema. Aside from this slight relapse there has been nothing else. His serum reaction on October 23d was ++.

CASE XXVIII. Male; City Hospital case. Multiple initial lesions of the lips and secondary eruption. Treatment with 0.3 gramme, June 2, 1910. Serum reaction on the same day ++. Lesions healed in ten days. He has had no recurrence up to the present time and has gained in weight. His serum reaction October 23d was —.

CASE XXIX. Case of optic neuritis. The condition since the last report is practically unchanged. The patient thinks there has been an arrest in the progress of his loss of vision. His serum examination which was — before treatment showed a ++ reaction October 26th.

CASE XXX. Case of syphilitic endarteritis of the base of the brain involving both pyramidal tracts and the sympathetic. The patient was injected on August 31st with 0.45 gramme. His serum reaction on the day of injection was +; September 21st, ±; October 12th, ±. A decided improvement in the patient's condition took place for a week or ten days and then remained stationary. His pupils became more nearly equal and mobile and the Argyll Robertson condition improved. The unilateral sweating of the left side of the face, neck, and shoulder had ceased. His speech had improved and tongue and pharnyx paralysis had cleared up. The anæsthesia and motor paralysis of his face had also improved; he walked better and could stand on his right leg; knee reflexes unchanged; ankle and knee clonus still exaggerated. A large patch of anæsthesia over lower portion of left side of trunk and thigh.

It was considered advisable to give him a second injection of 0.5 gramme. This was done on October 16th, and a most remarkable change took place in the patient's condition. His attending physician, Dr. Johnston, reported that within a week his pupils became equal and mobile, the right somewhat less so. The clonus on the left side disappeared, was only slight on the right, and he was able to stand on the paralyzed leg. Babinski was still present on both sides. There was no sensory disturbance at all and his speech disturbance, while still noticeable, had markedly diminished.

CONCLUSIONS.

This report is not intended to be conclusive for in order to determine the value of any therapeutic agent observation of cases should extend over a long period of time; however, from an attitude of conservatism in the beginning of the treatment I am becoming more and more impressed with the remarkable action of the drug, especially in the early period of the disease and in cases which do not respond to mercury and potassium iodide. One cannot fail to be convinced of the remarkable therapeutic action of a drug capable of producing such decided improvement as occurred in the case of luetic endarteritis of the base and in cases of obstinate gummatous ulceration which for years had been treated with mercury and potassium iodide with little or no result. The case of multiple initial lesions of the lip with secondaries, in which the Wassermann reaction has remained negative after a period of five months would strongly support Professor Ehrlich's contention that it is possible with one dose, though that be a minimal one, to completely eradicate the cause of the disease. The recurrence which took place in the scaling syphilis of the palm is much less severe and extensive than we see in the majority of cases of this form of syphilitic eruption, and the result may be considered as much better than that obtained by the usual remedies employed in the treatment of this affection. It is my intention to repeat the dose in this man at the earliest available time and I feel confident that a second one will control the cutaneous manifestations.

The drug exercises a remarkable influence over bodily nutrition, as evidenced by two cases which impressed me deeply. One of these, a medical man, had lost in weight and strength, and was practically incapacitated for work. Two weeks after the injection his lesions were healed, his appetite was good, he gained in weight, and the nephritis which developed during the secondary stage of the disease had disappeared. Since his return home I have had a personal communication from Dr. Engman, of St. Louis, under whose care he is at the present time, stating that he continues to improve in health and strength, and that his Wassermann reaction became negative on October 23d. Another patient who was in a state of extreme cachexia, with active bone and cutaneous lesions, was hardly recognizable at the end of four weeks. He had gained sixteen pounds in weight and his profound cachexia had disappeared. On October 22d, however, he showed a recurrence of a gummatous lesion on his arm and a periostitis of the external malleolus of the right foot and metacarpal bones of the left hand. In this case a second dose will be administered.

Nine cases of tabes were treated before the warning issued by Professor Ehrlich regarding the use of the drug in degenerative conditions of the nervous system was received. Fortunately, no untoward symptoms developed in any of these cases, but the results are not sufficient to encourage its repetition at least in advanced cases of tabes and paresis. It is possible, however, that we may err too much on the side of conservatism in syphilis of the nervous system and deprive patients of a remedy which, as in the one case we report, resulted in such great improvement.

Owing to a wider use of the drug and the difficulties in preparing it in a suitable manner, it will not be at all surprising if the results reported are lacking in uniformity or direct criticism against the drug when in reality the error lies in the manner of its preparation and the selection of suitable cases.

It cannot be too strongly emphasized that the preparation and manner of administration are most important factors in the successful treatment and that failures or unfortunate results may be traceable to carelessness or faulty technique. As an illustration of the latter is the case of Fraenkel and Grouven, in which a fatal termination resulted three and a half hours after the intravenous injection of 0.4 gramme dissolved in only 15 c.c. of water. Again, it is not at all improbable that it will be given in many cases nonsyphilitic under the mistaken diagnosis of syphilis and condemned for that reason. Under such circumstances it is impossible from a review of the literature alone to be dogmatic regarding its use, and one must be guided rather by theoretical considerations and personal experience in the employment of the remedy. During the experimental stage there will probably be many adverse criticisms should relapses occur or one or two doses fail to relieve the active manifestations of the disease, but too much weight should not be given them as they do not invalidate the underlying principle. In conclusion I wish to emphasize that in 606 we possess a remedy which is parasitotropic for protozoan spirilla and is not indicated in other forms of infection. It acts specifically for lues with a rapidity and intensity superior to mercury and potassium iodide not only on the cause but on the pathological products of the disease, accomplishing with one injection what the other remedies fail to do or for which they require much longer time to produce the same effect. Time can only answer the question as to the permanency of its curative action or whether the combinatory method with mercury and potassium iodide should be employed.

The author is under many obligations to Dr. Simon Flexner, of the Rockefeller Institute, for his kindness in supplying the drug for the treatment of these cases; to Dr. Noguchi for the careful manner

in which he carried out his modification of the Wassermann reaction; and to Dr. Thomas MacRae for much of the serological work.

Since the foregoing was printed a circular letter from Professor Ehrlich, bearing date of October 25th, has come to hand. The essential points contained therein are as follows:

With the testing of 40,000 doses of the drug the first phase of the experimental stage is concluded and the therapeutic value of the remedy absolutely established. It is without danger to the eye, and excepting optic atrophy is indicated in syphilitic affections of that organ. Contraindications for its use are advanced disease of the nervous system and disease of the heart and vessels.

The permanency of its effects chiefly concerns us at this time. Obviously it is dependent on the size of the dose, its method of administration, and the stage of the disease. The mode of introduction into the organism is highly important and in order of effectiveness as follows:

1. Intravenous injection of a very dilute alkaline solution.
2. Intramuscular injection of an alkaline solution.
3. Acid solution (monochlorhydrate or dichlorhydrate).
4. Neutral emulsion (intramuscular or subcutaneous).

The method of injecting the drug in neutral suspension subcutaneously has had the widest application owing to the minimal amount of pain produced when it is used in this manner. The results obtained, however, are less permanent than by the other methods. This may be accounted for partly by the difficulty in obtaining a uniform preparation and partly by the variability in the rate of absorption of the drug. The intravenous method gives manifestly better results. It is without danger and more agreeable for the patient. Over 1,000 cases have been treated according to this method. Alt and Schreiber recommend a dose of 0.3 gramme or from 0.4 to 0.5 gramme. Weintraud and others from 0.7 to 0.8 gramme. Iversen gives 0.5 gramme and two or three days later from 0.3 to 0.5 gramme intramuscularly, so that a total of from 0.8 to 1.0 gramme is reached. Of chief advantage is the fact that the intravenous injection may be repeated in two or three weeks, and should be if the clinical symptoms do not yield promptly or the Wassermann reaction is still positive at the end of four weeks. As yet no evidence of supersusceptibility has been noted, even in instances where the drug has been given as many as five times. Although this *modus procedendi* is beset by difficulties for the general practitioner, it should, in the interest of the patient, be the method of choice.

The following points are also emphasized:

1. Primary lesions should be treated as early as possible, and in the young and vigorous with not less than 0.5 gramme intravenously. As an aid to complete sterilization energetic local treatment should be employed, such as excision, cauterization, or other means of destruction.
2. In diseases of the central nervous system or circulatory apparatus great care should be exercised and only small doses (from 0.2 to 0.4 gramme) given. Whether the intravenous method is to be preferred in these cases has not yet been determined.

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8 WEST SEVENTY-SEVENTH STREET.

THE X RAY AND THE SPECIAL SENSES.

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(*Report from the Kansas City X Ray Laboratory.*)

In November, 1895, the epoch making discovery of the x ray was demonstrated by William Conrad Röntgen, then professor of physics at the University of Würzburg, Germany. Within two months, or in January, 1896, there is the record of the localization of a foreign body in the orbit by Mackenzie-Davidson, in London. In March, 1896, a Dr. Van Duyse reported experiments upon the eyes of rabbits, before the Medizinische Gesellschaft of Gand. He made radiographic exposures upon small films introduced and adapted to the conjunctival sac.

As the localization of a foreign body in the orbit does not permit of the simple method of making x ray negatives in two planes, at right angles to each other, we find many oculists and radiographers have devised special apparatus and procedures. Time has shown that the stereoscopic principle involved in the original apparatus of Dr. William M. Sweet, reported in 1897, is most universally imitated or elaborated.

Before describing this method, it may be well to describe briefly several methods that may be of relative value where the Sweet method cannot be obtained. These methods are all more or less inaccurate, and should be used only when the exigencies of the case prevent the application of the more exact stereoscopic method.

(a) The fluoroscopic method; in which the shadow of the foreign body is examined upon the fluoroscent screen and the excursion of this shadow noted while the eye ball is rotated in various directions. While this method may locate foreign bodies, it is not to be recognized, as a small piece of foreign substance may not cast a demonstrable shadow and the small defects in the fluorescent screen may confuse. There are too many chances of error and prolonged exposure.

(b) The method of Köhler; this is a simple radiographic method, calling for lateral pictures of the orbital area. The first negative is taken with the bulb perfectly still, and shows the presence or absence of a foreign body. A second negative is taken, during which exposure the patient is instructed to move the bulb from the bottom to the top of the vertical axis. If this negative shows a blurred shadow of the foreign body, corresponding to the excursion of the bulb, we may surmise that the foreign body is within the bulb. It is to be observed, however, that we could have a movement of the body if it was in the paribulbous tissues also. Therefore, this method is only to be used where the stereoscopic apparatus is unavailable.

(c) The methods of Fox and Born involve the insertion into the cocainized conjunctival sac of a thin sheet of vulcanized rubber or celluloid, in which are imbedded two fine wires, crossing at right angles. The relation of the foreign body to the wires is determined upon the x ray negatives.

(d) The method of Cowl calls for one lateral view of the orbital area. The second negative is inserted into the mouth and the tube placed in a perpendicular plane to the orbit. Thus we obtain the vertical and horizontal planes and can estimate the foreign body accordingly.

(e) The Fürstenau calipers and negatives, taken by the double anticathode tube, is more applicable in the location of foreign substances in other parts of the body than in the orbit and head.

There are other methods of inaccurate localization, but it remains to describe the exact stereoscopic method by the Sweet-Bowen apparatus. This apparatus provides for two exposures stereoptically. The foreign body is then charted, with geometric accuracy, in relation to two opaque objects, a cone and a ball, adjusted to a known distance from the centre of the cornea. In our laboratory we have used the Sweet-Bowen apparatus for three years with satisfaction. Dr. Sweet has recently elaborated his original simple apparatus into an imposing complication that lends to his original apparatus the ability to fix and maintain the position and quietude of the patient, which is a most satisfactory feature of Bowen's modification of the original Sweet apparatus. The patient lies comfortably upon a table, with the head in a lateral position upon the apparatus. The first exposure is made in the horizontal plane of the bulb, the head of the patient being immobolized and the small lead ball placed five or ten millimetres from the corneal centre of the pupil and the cone at the outer angle of the orbit. The axis of the eyeball should correspond to the spar holding the small lead corneal ball. The second exposure is made with all the conditions remaining identical excepting that the tube is moved 2⅝ inches toward the body and tilted and the plate changed. From measurements upon the finished negatives the relation of the foreign body is platted upon charts arranged by Dr. Sweet.

Other ocular conditions to which the x ray lends diagnostic assistance, are the determination of the extent of the bony changes in the orbit from extraorbital, intraorbital, or paraorbital tumors, sarcoma of the orbit, and fractures of the base of the skull. Tumors involving the sella turcica, originating as an acromegaly or otherwise, will display in lateral views, the enlargement of the sella turcica and pressure changes upon the orbital bones or optic commissure.

Passing from the eye, let us consider the x ray in aural and mastoid diagnosis. The determination of the presence or absence of a foreign body in the auditory canal is an undisputed, but seldom used, field of radiography. While there is much difficulty in the estimation of the shadow of a bean or beetle, we should not overlook a simple and painless method of determining a foreign substance in a swollen and painful ear. The inflammation, swelling, and tenderness, which interfere with clinical inspection and palpation, may prompt the otologist to employ the painless and harmless x ray probe.

The pathological mastoid has produced an interesting field for x ray efforts. Thanks to the energy of Schüller, Beck (Chicago), Lange, Kanasugi, and others, we have advanced rapidly in a new and promising field. Briefly, we may outline the possibilities of the x ray as a diagnostic agent in mastoid anatomy and pathology: 1. To determine the anatomical structure of the mastoid, whether diploetic, with few small cells, or pneumatic with many large cells. 2. To chart or map out the relation of the lateral sinus to the auditory canal. This is of great assistance in executing an operation upon the mastoid. With the anatomical knowledge of the individual case obtained by the x ray examination, one can curette and gouge to the depths determined upon the x ray plate. Lange states that "since the external auditory meatus and the groove for the lateral sinus are readily identified upon the skiagram, the distance between these two landmarks may be measured approximately, always allowing for slight oblique distortion, and thus the area of the operative field may be determined. This is of no small consequence, as the choice of operative procedures may depend upon whether there is a forward lying sinus or not. Three types of normal mastoid processes are recognized by Politzer: The pneumatic or cellular type, the diploetic or spongy type, and the mixed types. The pneumatic type is extensive, has numerous large and small cells, and the lateral sinus is usually placed some distance back of the external auditory meatus, giving plenty of room for the usual operative procedures. In the diploetic or dense types, the mastoid process is small, has fewer and poorly developed cells, and the lateral sinus lies nearer the external auditory canal. In these cases there is more danger of chiseling into the lateral sinus, and more caution is necessary in operating." The presence of cells in the base of the zygoma may also be shown.

Upon the principle that the x ray will give us a negative showing the projected pathology of any area exposed, we are safe when we state that the amount of such pathological information obtained depends upon the technical superiority of the x ray negative and the ability to interpret shadows. While it is comparatively easy to read the projected x ray pathology in chronic or necrotic mastoids, it is only by the study of technically perfect plates that the shadows of acute and subacute mastoids are interpreted. Didactically, we may say that the acute mastoiditis will show a haziness or cloudiness of the affected mastoid in comparison with the opposite healthy mastoid. It is not to be stated that every mastoid case should be x rayed, nor that even one in ten will be presented to the röntgenologist, but if the otologist does desire information concerning the anatomy and gross pathology of the mastoid, the x ray negative, technically correct, will provide such information. The work is difficult but is eminently satisfactory. It is surprising how extensive an acute inflammatory process in the mastoid will become without external signs. The x ray furnishes us a method of determining the changes in the mastoid cells, even superior to opening the mastoid, for the x ray will chart out the extent of the changes and the location of the lateral sinus. We feel that there is a great future to the use of the x ray in mastoid and accessory nasal sinus pathology.

The accessory sinuses of the nose, so frequently the habitat of an obscure inflammation, with a clinically imperfect picture, furnish a brilliant field for x ray efforts. The shadows of an air filled sinus becomes altered immediately when filled with pus or when the lining membrane becomes swollen and the sinus is filled with inflammatory mucus.

Negatives taken in the posterior anterior position, with the frontal sinuses in apposition to the plate, will give us the anatomical outlines of the frontal, ethmoid, and antral sinuses. The lateral negatives show the other plane of these sinuses, together with the outlines of the splenoid sinus beneath the sella turcica. Only a fair interpretive ability will determine the difference in the shadows of the involved sinuses with the remaining normal sinuses. One must always realize the possibility of anatomical anomalies, such as absence of a nasal sinus and the presence of unusual sinuses in the lower border of the orbit. Technically correct plates and careful interpretation of shadow values determine the extent to which the x ray method will assist the rhinologist in his diagnosis. The rhinologist should not attempt to derive diagnostic assistance from poor negatives. He will surely undervalue the method and prematurely discard a promising adjunct to correct diagnosis. The absence of pain or discomfort to the x ray procedure is an advantage over transillumination. It is not my intention to discredit transillumination, but we are able to draw the same conclusions, together with others of advantage to the diagnosis, from this pleasanter x ray method.

Pharynx and larynx: I shall not discuss the presence of foreign bodies, but will present some slides later. However, I should like to mention some peculiar pathological conditions such as the presence of calcareous areas in the tonsils and Stenson's duct, which will show up on x ray negatives. These deposits are usually so easily determined by palpation that they are rarely referred to the röntgenologist for diagnosis, but are found in the course of examinations for other conditions. Calcification of the thyreoid and cricoid cartilages will give characteristic shadows. Another condition which could be cleared up if the unpleasant and distressing bronchoscope was impossible, would be the determining of the area of involvement of a tracheal constriction or cancer with the air space of the trachea showing up to a lessened degree.

The anatomical position of the hyoid, thyreoid, and cricoid cartilages, and the position of the epiglottis may be determined by the Röntgen negative. The patient with throat symptoms, but pathological changes in the vertebræ of the cervical region, is frequently seen by the laryngologist. We are able to study out these bony changes by careful Röntgen examinations in both the anterioposterior, lateral, and oblique positions. Arthritis deformans with its attendant bony changes and exostoses upon the vertebræ may be classified under this heading. The deposit of calcareous material and arteriosclerosis of the carotids and calcareous glands of the neck and mouth are also to be mentioned.

Dr. Max Schier, of Berlin, has contributed a monograph upon *The Use of the X Ray in the Study of the Physiology of the Speech and Voice.* I feel that this subject warrants a special paper. Eykman also published, in 1908, an article upon deglutition, in which he made many observations upon the positions of the hyoid bone and the Adam's apple in their relation to throat physiology. His Röntgen examinations were made by cinematographic pictures, the first on record (1901). I feel that up to the present time I have not given this subject enough study to make an intelligent report to you who are so well grounded in throat anatomy and physiology. I shall, therefore, withhold a report upon this until I have given more time to translation and study.

There is a possible field for the x ray in determining the possibilities of an individual as regards his or her fitness, anatomically, for voice culture. We know that the resonance of a voice depends upon the use that the singer makes of the accessory sinuses. Therefore, if the anatomy of these cavities is not normal in an individual or voice student, and there did not seem to be the ability of such cavities or sinuses to ever approximate a size to insure sufficient resonance, it would be well to know this before years of study and application had been uselessly expended in voice culture. While it is quite possible to develop a sinus, just as it is possible to develop a muscle, it would be folly to attempt to put an accessory sinus where there was a congenital absence or a pathological sclerosis.

In closing, permit me to present the following outline of the possibilities of the x ray in your specialties:

1. The x ray stands preeminent in the location with exactitude of foreign bodies in the eye, ear, nose, and throat.

2. The x ray is a valuable assistant in the diagnosis of pathological changes in any of the bony tissues of the ear, orbit, nose, and throat, whether this change be a necrosis that is clearly and unmistakably recognized, or whether it is the presence of an exudate that alters the density of the shadows of a part.

3. The x ray gives us definite information regarding the anatomy of those cavities which cannot be obtained in any other way than through operative procedure.

4. The x ray permits us to study the physiology of speech, singing, and deglutition.

5. By the process of diagnosis by exclusion the probability of sinus involvement will be excluded where we have pains of a neuralgic character.

6. The x ray serves as an assistant in an operative procedure looking to the extraction of a foreign body from a sinus, cavity or orifice, by noting that the instrument used to grasp the foreign body is actually attached to such body. This later service is best afforded by the fluoroscope, thus insuring a vivid picture of the operation in progress.

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THE ROENTGEN TREATMENT OF CARCINOMA OF THE BREAST.*

By RUSSELL H. BOGGS, M. D.,
Pittsburgh.

Röntgen treatment is given both as a palliative measure and as a curative agent. Although the Röntgen rays have been used extensively, röntgenologists differ considerably in regard to the value of the treatment. This is not only due to different degrees of malignancy, in different classes of cases, but also in variations in technique.

Some have given small daily doses with the tube placed close to the surface of the skin while others have given only few massive doses with the tube at from twelve to fifteen inches from the surface. Since the technique varies from a few to fifty or more treatments, the physiological action on the tissue will vary from an almost imperceptible dermatitis, without any tanning, to an inflammation of the second or third degree, followed by a sclerosis of the adjacent lymphatic glands. Then it would be natural to expect that various röntgenologists place the value of the Röntgen ray in the treatment of carcinoma of the breast at a different level.

In some localities, röntgenologists were governed or rather were compelled to treat the cases according to the directions of the surgeons who referred the patients. Of course, this did not give the röntgenologists a fair chance. This is particularly true in large hospitals where the cases have been treated by young röntgenologists. One röntgenologist complained that his patients, who were referred by the staff surgeons, told him the time of exposure and the amount of treatments to give in each case. The patients were instructed that they could leave the city as soon as this number of treatments were given. He further states that he realized that in many of the cases no therapeutic effect had been obtained, and for this reason he disliked this particular branch of röntgenology. It would be as rational for the surgeon to prescribe a definite dosage for his anæsthetist.

Such will not be the case in the future as both surgeons and physicians recognize röntgenology as a definite specialty.

In taking up the treatment of carcinoma of the breast it seems advisable to divide the subject into inoperable and recurrent cases and anteoperative and postoperative treatment.

The rays are the only therapeutic method in inoperable cases that will cause cessation of pain and hæmorrhages, disappearance of offensive odors, arrest of invading progress, and improvement in the general health of the patient. In a certain percentage of cases the mass is reduced to such an extent that it will become operable. It seems, in the past, that many of these patients who have improved so much were operated upon too early, before the disease had sufficiently localized. When a patient presents herself with the symptoms unfavorable for operation, the mass breaking down, or about to break down, a number of intense radiations should be given walling off the mass as completely as possible in order to lessen the chances of further infection. Richardson states: "An incomplete search of my records since 1890 gives 1,300 cases of breast tumors of all kinds. There were 398 cases operated in for cancer." Since a large majority of breast tumors are carcinoma, there must be at least two thirds of the patients that come too late to be in a favorable condition for operation.

It is a well known fact that many inoperable patients who have been suffering from pain and toxæmia have been relieved after twenty or thirty intense radiations of these symptoms for a period varying from six months to three years.

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*Read before the American Röntgen Ray Society, Detroit, September 30, 1910.

I shall briefly summarize twenty unfavorable cases for operation, classed as unfavorable because there was extensive involvement of both axillary and supraclavicular lymphatics together with a broken down mass or about to break down.

Every röntgenologist can report similar cases of inoperable carcinoma and some more extraordinary cases, and this proves not only the inhibitory action but that the rays must be looked upon as a curative agent as well. Never depend on the rays alone but call in surgical aid even in the inoperable cases, as more can be accomplished with the combination of surgery and x ray than by either method alone.

Now, while there are only five of these twenty patients living to-day, every one of them was sufficiently benefited to justify the treatment. The pain was relieved for a period averaging a year, in nearly every case the mass was reduced in size and in some cases it became freely movable. Almost every one of these patients was able to perform her usual duties and be with her family, free from pain and from the offensive odor so distressing in ulcerated carcinoma. The patients who died from internal metastases did so without external symptoms except swelling of the arm. As a rule, the patient did not know she was dying of carcinoma. This seems a great deal to any one who has seen a number of carcinomatous patients with a broken down mass so offensive that it is almost impossible to stay in the room with the patient.

	Extent of Disease.	Operation after Treatment.	Result.
I.	Ulcerated mass with axillary and supraclavicular involvement.	Radical.	Lived four and one half years.
II.	Large mass in breast with both axillary and supraclavicular enlargement.	Radical.	Patient died within twenty-four hours.
III.	Large mass adherent to skin in breast with axillary involvement.	Would not be operated upon on account of organic heart lesion.	After forty treatments and a severe dermatitis which lasted six or eight weeks, the mass was reduced to a small nodular hard lump, freely movable. Patient well; lump still about same size seven years after treatment.
IV.	Both breasts involved with glandular enlargement.	No operation.	Pain relieved after six treatments but no reduction in mass after fourteen treatments.
V.	Ulcerated breast with glandular involvement.	No operation.	Mass reduced in size. Ulcer never entirely healed. Patient relieved for six months, died three years later.
VI.	Mass in breast with extensive glandular involvement.	Operated upon after thirty treatments.	Patient lived three and one half years.
VII.	Mass broke down by a plaster which caused rapid growth.	No operation.	Healed by forty-five treatments; patient apparently well for two years. Patient died of epilepsy.
VIII.	Mass broke down by a plaster with extensive glandular involvement; had symptoms of internal metastases.	No operation.	Healed over after forty-five treatments. Arm remained swollen and was amputated on this account. Patient died two months later.
IX.	Mass in breast with glandular involvement.	Would not consent to operation.	Mass reduced to size of marble after four months' treatment; lump about same six years after treatment.
X.	Mass broke down by plaster; glandular involvement. Had not healed after plaster.	No operation.	Healed over by thirty treatments, all external signs disappeared except swelling of arm. Patient comfortable for one year; died six months later.
XI.	Large mass adherent to skin with extensive glandular involvement.	Radical.	Patient lived one and one half year.
XII.	Mass with extensive glandular involvement.	Would not consent to operation after treatment on account of her age.	Mass reduced two thirds and comfortable for eight months. Died of organic heart disease six months later.
XIII.	Ulcerated mass in breast with glandular involvement.	Modified operation.	Patient apparently well three years after operation and treatment.
XIV.	Mass with extensive glandular involvement.	Modified operation.	Patient lived one and one half year.
XV.	Mass adherent to skin with extensive glandular involvement.	No operation.	Patient apparently well after three years.
XVI.	Mass in breast with glandular involvement.	Radical.	Patient apparently well after one and one half year.
XVII.	Ulcerated mass with glandular involvement.	No operation.	Healed over after four months. Patient comfortable for one year. Died nine months later
XVIII.	Large ulcerated mass with swollen arm and taking morphine to relieve pain.	No operation.	After forty treatments ulcer healed. Patient was comfortable for one and one half years, made trip to California and died three months later from internal metastases, with no local recurrence.
XIX.	Ulcerated mass with glandular involvement.	No operation.	Patient weak and suffering intense pain when she came for treatment; three or four treatments relieved pain to such an extent that when unable to come to the office she insisted on having a machine in her home to relieve the pain. Died three months later.
XX.	Mass broken down with extensive glandular involvement.	No operation.	Ulcer almost entirely healed and pain relieved for nine months. Patient died three months later.

The rays also have an inhibitory effect on the bronchial and mediastinal glands, but not to the same extent as on disease situated nearer the surface. This is demonstrated by the relief many derive from treatment when external signs of the disease have disappeared. I have two such patients, who know that a cure cannot be expected, and only come when the symptoms become unbearable.

Several surgeons who have operated in cases in which anteoperative Röntgen treatment had been given, coincide with the following statement: If lymphatic nodules were palpable they were found to be small and hard of the type met with in chronic inflammations. The tumor mass is reduced in size. Fibrous elements predominate. It is a well recognized fact that the type of neoplasm more than any other feature influences its course. The more pronounced the cellular and the less the fibrous elements, the greater will be the malignancy. This explains why the atrophic scirrous type is less malignant than medullary odeocarcinomata. Since Röntgen treatment will increase the stroma or connective tissue and decrease cellular elements it decreases not only the mass but also the degree of malignancy.

A very noticeable and gratifying result of anteoperative treatment is the almost complete disappearance of the normal scar tissue which follows operation. One of these surgeons at the present time sends all his cases for anteoperative treatment as a matter of routine even if there is no glandular involvement. He states that postoperative treatment in the early cases is then unnecessary and that the patient can go to her home without taking any further treatment. Anteoperative treatment has not been carried out in a sufficient number of cases to say positively that it is advisable as a routine procedure. But since the growth can nearly always be reduced and a fibrous wall be formed delaying extension, it seems that in any case anteoperative treatment is allowable.

In recurrent carcinoma, where the chest is studded over with nodules, the external signs of the disease can be cleared up by Röntgen treatment providing the patient is in a fair physical condition. But if the bronchial and mediastinal glands are involved before radiation is begun, temporary relief with prolongation of the patient's life is all that can be expected.

In cases where recurrence had taken place with nodules studded over the chest and where the arm was swollen, I have been able to apparently cure only four patients although some have lived over three years. Since this is the experience of a number of other röntgenologists it seems advisable that Röntgen treatment should be given to all these patients. The palliative effects of the treatment should never be denied a patient.

My experience has been that the treatment in this class of cases must be given somewhat more guardedly than in patients who have not been operated upon, as the skin is thin with a lessened blood supply and a dermatitis is more readily induced. When dermatitis occurs it is very slow to heal and the burned area cannot be readily incised as in an unoperated case.

POSTOPERATIVE TREATMENT.

Postoperative treatment of carcinoma of the breast has been adopted by a large number of surgeons as a routine procedure. It is indicated after all operations because more patients are cured and a longer freedom from recurrence is obtained. The treatment should begin as soon after operation as possible as success demands promptness, thoroughness, and energy. The treatment should be given with all the severity the patient's tissues will bear. Inefficient treatment is not only useless but may even stimulate any remaining foci. It is, of course, harmful to push the treatments to such a degree that the skin over the chest undergoes degeneration. One advantage in anteoperative treatment, where there is extensive involvement, is that more intense radiation can be given and then if there is any degeneration of the skin it can be removed at the operation. I always give twice as much radiation at a sitting, before operation as after, on this account.

After operation there is no need to delay treatment as the healing of wounds, closing of sinuses, covering of granulating areas, etc., are hastened by radiation. A remarkable result of postoperative treatment is the rapidity with which the stiffness in the shoulder disappears. This must be due to the absorption of scar tissue. The scar which is left after operation is almost entirely absorbed. As recurrence very often occurs in the scar this alone is sufficient to justify the treatment. Rodman states: "If anything has been demonstrated it is that recurrence generally takes place in the skin, and its wide removal is the prime consideration, even though the necessarily large wound must be closed by either undermining or skin grafting." As we all know how amenable skin cancer is to the rays, it is easily understood that any foci here can be destroyed by the rays.

Radiation should be given over the anterior chest wall in the axilla and over the supraclavicular glands. It should be particularly strong over the axillary glands and over the clavicle as here the tissues stand intense radiation and the glands are reached with more difficulty. In the past, many have given the longer amount of radiation over the site of operation.

The length of postoperative treatment cannot be determined except by the indications of the individual. Sufficient treatment should always be given to produce tanning with a slight desquamation. This will usually require, when using a filter, between twenty and forty treatments of twenty minutes each with the tube placed at about twelve inches from the surface. Röntgen treatment should be given as carefully and as thoroughly as an operation is done. Then only can the best results be obtained. I am sure, much of the postoperative treatment has been given carelessly. One reason for this is that often times patients live in distant villages where they do not have an experienced röntgenologist and it is impossible to keep the patient in the hospital for a sufficient length of time to secure the proper amount of treatment. A few days ago a surgeon called my attention to two patients to whom I had given Röntgen treatment after operation over eighteen months ago. He said he had expected a recurrence in both these cases within a short time on account of the extensive involvement and that he was positive that only the intense radiation had prevented a recurrence. At present, I am treating a recurrent case in which the patient had been operated upon with fifty subsequent Röntgen treatments six years ago. The disease was so far advanced that the surgeon did not think favorably of the operation and expected only temporary relief. In this case nearly all the treatment was given over the site of operation. The recurrence is apparent in the supraclavicular glands only. Whether there is a deeper metastases remains to be determined. The recurrence is disappearing under treatment. Here is a case where the rays have proved of great service even with faulty technique. The present day method might have worked a permanent cure.

Early operation and a thorough use of the Röntgen rays will do much toward doing away with the clinical picture of cancer of the breast which has been so drawn in past years as to create a most unfavorable impression on the profession and the laity. Postoperative treatment certainly makes the operation more radical, as glands can be reached which cannot be removed.

After the treatment and observation of a large number of cases both operable and inoperable, before and after operation or without operation, I concluded that a localized resistance to the invasion of carcinoma is temporarily or permanently established. This is especially true in the milder type of malignant epithelial growths. It is a noticeable fact that the more widely disseminated the less the reaction is produced. This principle may be observed in many of the localized infections.

CONCLUSIONS.

I. To recapitulate.—Under the influence of the Röntgen rays, used as a palliative remedy glandular involvement has melted away; ulcerated masses have healed over; adherent tumors have become movable; inoperable cases have become operable; rapidly growing carcinomata have assumed a more scirrous type; lymphatic pathways have been sealed against extension and a fibrous wall has been erected against further growth; life has been prolonged and redeemed from misery. This would seem to call for routine anteoperative use of the rays even in favorable cases, but experience is not yet sufficient to permit us to assert this as a demonstrated fact.

II. Postoperative treatment has diminished scarring, promoted healing, postponed or prevented recurrence.

III. Such results demand not only technical competence, but judgment, clinical knowledge of both the disease and the remedy, promptness, energy, and courage.

IV. Surgeon and röntgenologist must work hand in hand, each availing himself of the other's aid, but each respecting the other's authority in his own field and each having a broad scientific understanding of the whole subject.

Empire Building.

PROPHYLAXIS OF ENTEROCOLITIS.*

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This can be summed up in one sentence: "Stop the milk in all bottle fed babies during the hot weather." Dr. Neff, chief of the Department of Public Health and Charities, in a recent investigation of the milk question in Philadelphia, stated that at least eighty per cent. of all the milk brought into Philadelphia should be condemned. That is to say, eighty per cent. of all the milk given to bottle fed babies is contaminated and unfit for use. Now, then, "If the salt has lost its savor, wherewith shall it be salted," and the same thing holds good with milk—if it has been spoiled, how can it be reclaimed? That contaminated, germ infected milk can be rendered clean, pure, suitable, and a safe food for infants is unworthy of consideration. Pasteurization nor any other process does not render dirty milk clean, stale milk fresh, nor germs harmless.

Milk is often adulterated by unscrupulous dairymen by the addition of water. If the water used for this purpose is pure, it produces no ill effects other than to dilute the milk and thereby lessen the percentage of its ingredients. Frequently, however, the water is not pure, and is a common source of contamination.

Another important source is through disease of the udder of the cow, or carelessness in handling this organ. Cows are often kept in filthy stables, from which dust and other excrementitious matter find their way into the milk pail. The pathogenic bacteria that do not gain access to the milk in the stable often do so through the agency of the bottles or cans in which the milk is shipped, which are either unclean or cleansed with polluted water.

Tuberculosis and various inflammatory conditions due to bacteria, may exist in the udder of the cow, and may be so slight as not to attract the attention of the milker. Among the pathogenic organisms that have been found in milk are the bacilli of typhoid fever, tuberculosis, diphtheria, and cholera. In fact, any of the bacteria present in the air, water, ground, or derived from the diseased or filthy condition of those who handle the milk at any time, or arising from the animals themselves, may readily find their way into the milk, and, inasmuch as this fluid is an excellent culture medium, they multiply with great rapidity.

There is no greater lesson to be learned in the whole range of milk infections than that impure milk causes diarrhœa. In my opinion, nine tenths of so called cholera infantum is due directly to impure milk. The onset in many cases is sudden, and the little one, from a strong, robust, rosy cheeked baby, within a few hours is changed so greatly that its own mother will scarcely know it. We all, as practitioners and men of experience, are familiar with this picture, and we also are familiar with the fact that in the bottle fed baby, enterocolitis in hot weather is often fatal. The infant mortality in Philadelphia this summer has been unusually large, and I cannot help but think that impure milk is responsible for it.

When a physician is called to a child in this condition, his first advice is, "Stop all milk." Why does he stop the milk? Because he realizes that it is the source of the trouble. The milk has ceased to act as a food, and is as sand in an inflamed eye. It is not assimilated, but irritates and ferments, and transforms a local affection into a most fatal and dangerous infection. It retards recovery and may render it impossible. The doctor has a patient on his hands, with the mucous membrane of the small and large intestines inflamed; the bowels are moving from ten to thirty times in twenty-four hours; there are high temperature and other alarming symptoms. In other words, the child has been poisoned—been poisoned by milk.

The doctor is now confronted with the problem of finding some substitute for the milk. Barley water, brandy, albuminized water, some of the different extracts of beef—all must be brought into play.

Under this line of treatment the patient often recovers; whereas if we were to continue giving the child milk, the mortality would be one hundred per cent. (Here be it understood that I am only referring to the diet *per se* for the sick child.) Therefore, it seems but logical to me that if this line of diet is sufficient to nourish a dying child and restore it to health, why not taboo milk in the first place, and substitute something for it? Milk has been peptonized, has been modified, has been pasteurized, has been boiled, and has passed through all sorts of processes to make it suitable as a diet for babies, and yet with all the laboratory work through which it has passed, and the beautiful formulas that have gone forth for doctors and mothers, cholera infantum not only prevails, but actually seems on the increase. Milk that has been allowed to deteriorate and become contaminated cannot be converted into a suitable food for a baby by any known method of modification. Such milk may be passed through any of the aforesaid processes, and thickened with cereal foods, so that it may look rich and nourishing, but nevertheless it carries the dangerous toxines of bacterial growth.

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*Read before a meeting of the Germantown County Medical Society, October 13, 1910.

My firm belief is that milk has killed more bottle fed babies during the hot weather than soldiers on a battle field. To reduce this infant mortality to figures, I would say that one fourth of all children die before they reach their fifth year, and a conservative estimate would say that at least one half of these deaths are due to diarrhœal diseases, and may be attributed directly to impure milk. Now, in spite of the fact of the many "pure milk crusades," this frightful mortality of 12.5 per cent. continues. The solution of the problem, to my mind, is not in the attempt to establish a pure milk suppply, but in the substitution of some article for milk. This may seem to be rather a startling statement, but taking for granted that the milk has been kept free from dangerous bacteria in the dairy, which is a generous admission in view of the facts previously stated, and that the milk is then maintained at a temperature of 40° F., which precludes the growth of all bacteria; still the chief danger lies in the fact that proper care is not taken of the milk after it reaches the poor and ignorant consumer, and it is in the households of the working class that we have about ninety-eight per cent. of the cases. Too frequently we learn of the practice of making in the morning the whole day's supply of food, because it saves time for the busy mother who has many other duties to attend to. This is, to say the least, most dangerous, as changes almost invariably take place in the mixture, and by the close of the day it becomes unfit for consumption. Add to this the lack of cleanliness of the feeding apparatus, especially when dealing with ignorant or careless mothers, and the objection to bottle fed babies becomes a real and serious one. If the substitution of some article that will do away with these objectionable features would accomplish nothing else, it will have gone a long way toward saving many a baby's life.

Of course, on purely physiological and scientific grounds, the assertion may well be made that any other aliment than milk during the milk period is baneful; that we should give the baby that which most closely resembles Nature's product, or mother's milk, but surely the incontrovertible fact that this "Nature's food" causes the death of one eighth of all persons born, would seem to warrant ample ground for the belief that some radical change is urgently demanded in infant feeding.

Therefore, convinced as I am that milk is the direct cause, I say stop it before it has poisoned the child—for no other word can be used except "poison." It is positively as much of a poison in many instances as is a dose of cyanide of potash, although it may not act as quickly.

Your first criticism of this paper will probably be, "What are you going to give us as a substitute for milk?" and I must admit that herein lies the rub, and the difficulty of finding a proper substitute is probably the reason why doctors have adhered to milk as a diet for so many years.

It seems to me that the diet of the bottle fed baby during the extreme hot weather might be as follows:—Barley water, with a little expressed juice of beef and a pinch of salt; albuminized water with a little dash of pure orange juice; and to a limited extent the best brands of condensed milk.

While this line of diet has given me very good results, still I realize that many valuable suggestions can be offered by an intelligent discussion of the question, and this is most heartily invited. Much can also be accomplished in this direction by the physiological chemist, who should work hand in hand with the physician to solve this difficult problem, which is of such grave importance.

Chew and Penn Streets.

WHAT SHALL WE DO TO PREVENT LATERAL CURVATURE OF THE SPINE?

By Max Strunsky, M. D.,
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From the very first attempt on the part of the writer to induce the boards of health to adopt a routine examination of the backs of school children, especially at the "scoliotic age," he has been confronted by the question from physicians as well as laymen, what harm does scoliosis do, anyhow? To his mind a crooked back is a self evident argument and the efforts to save a child from such a fate should be instantaneous. But to the utilitarian the mere deformity of body is not sufficient an argument. He wants to know to what extent this deformity impairs the health of the patient, especially in the many thousand cases where the spine is but mildly affected.

EFFECTS OF SCOLIOSIS.

In the pronounced types and those of medium severity, the heart is displaced and the lungs are compressed. The stomach and intestines and liver are displaced, and the spleen and kidney upon the convex side are smaller than normal. This compression and displacement of organs interferes with their functions and by the mechanical pressure of bone on tissue, causes atrophy of vital structures.

The intervertebral discs are highly elastic. The pressure of the body in the upright position upon the discs reduces them to about one fourth their normal size. The elasticity of the spinal column is mainly due to the intervertebral discs. In scoliosis the lateral pressure of the vertebræ causes the discs to become wedge shaped and to lose their elastic power. The mobility of the spine is also lessened in scoliosis. This is brought about by the misshaped vertebræ and ribs, by the irregularities of the intervertebral bodies, by the interference of newly formed bone which is thrown out about the margins of the vertebræ and the articular processes, and by the ossification or periosteum and ligaments. Also by the shortening of the soft parts on the concavity. The function of the flexibility and elasticity of the spine and thorax is to protect the contents of the trunk from jar and external violence.

Scoliotics lack endurance. The person who has even a moderate degree of scoliosis cannot work as hard as one who has a straight spine, which is both an individual and a social loss. Scoliotics often suffer from headaches, backaches, and fatigue, and they have a frequent irresistible desire to lie down and rest. Often they are irritable. Undoubtedly these symptoms are to a great extent the result of the rigidity of the spine and thorax which acts like transmitters to the nervous system of the jar resulting from walking or from various other movements of the body.

DIFFICULT AND IMPOSSIBLE LABOR.

Scoliosis occurs four and a half times more often in girls than in boys, and scoliosis has always been a source of anxiety to the woman scoliotic and her friends, for it is a known fact possessed even by the laity that this deformity has a direct relation to the mechanism of labor. Undoubtedly the evil of scoliosis in labor is exaggerated. However, it has been proved by experience that scoliosis constitutes a complication in labor which adds time and pain to the process on account of the diminished lumen of the parturient canal caused by the tilted promontory and also on account of the diminished vitality which exists in scoliotics. In severe cases the proximity of the promontory may be such that the natural termination of labor is impossible.

PSYCHIC EFFECT.

It does not require a stretch of the imagination to understand the wave of despair which sweeps over a scoliotic child or adolescent when he awakens to the full realization of his condition. No one is so callous as to become reconciled to this deformity, and the mental shock of the misfortune finds, only too often, expression in life long brooding. This may be explained why hysteria and neurasthenia are so prevalent in scoliotics. Individual suffering may be of little importance to the world at large, but to ourselves and to our children, who may be the victims, or to those of us possessed of wider human sympathies, the matter is looked upon with different feelings.

The thought that the precaution to discover the trouble earlier, and that subsequent proper treatment would have prevented the deformity altogether, makes the bearing of it more bitter still.

PREVENTION POSITIVE.

Scoliosis can be prevented. This is the opinion of the men who have done work in this department in Germany and Switzerland from the time when a routine examination of the backs of school children was adopted by the boards of health of those countries and the active campaign against scoliosis instituted. This opinion holds good in all cases except those arising from rickets or osteomalacia, where the deformity comes on in early childhood. Even then the preventive and early treatment is the only effectual one. "In the entire domain of medicine and surgery, prophylaxis has never done so much good as prophylaxis of scoliosis." These are the words of their official report. At present the orthopædist plays a minor rôle in the treatment of scoliosis. His work is limited, by the lateness with which the child is brought to him, to an attempt to improve the deformed child by lacing him into corsets or teaching him calisthenics, but the main part in the treatment of scoliosis, that part which does the most good to the patient, viz.: the early recognition of the deformity—the prompt institution of prophylactic measures in suspicious cases, and the early treatment of this deformity, is seldom put into his hands and is, in fact, altogether neglected in the United States.

EARLY TREATMENT SPECIFIC.

No one who has experience in the treatment of scoliosis disputes the efficacy of early treatment. This treatment consists of:

First: Determining and correcting a possible exciting cause, such as tilting of the head either due to torticollis, deafness of one ear or disturbed vision or a faulty position of the spine, either due to shortness of one leg, empyemia, or paralysis of the trunk muscles.

Second: Forbidding patients to carry burdens. Since most children are right handed, the muscles of the right side of the body are the stronger. In case of weakness of the spinal column, the right muscles pulling more strongly on their side than their opponents on the left, draw the spinal column toward them. This is undoubtedly the reason why in a vast majority of cases the lesion in scoliosis is on the right. We have all seen children with scoliosis permitted to carry burdens in the form of heavy books, or even infants, and generally on the right arm! This leads to a greater muscular development on the right side, which accentuates the lesion. It is imperative to forbid scoliotic children to carry burdens of any kind and to instruct them to use the left hand as much as possible unless the lesion is on the left side.

Third: Providing frequent intervals for the child to lie down and rest, so as to prevent fatigue and the strain of the spinal column which comes from sitting.

Fourth: Building up the system. This is done by good food, fresh air, baths, and massage.

Fifth: Gymnastics. This increases the size and strength of the muscles, vertebræ, ligaments, and dics, and toughens the cancellous tissue of the vertebræ. Gymnastics in scoliosis is a therapeutic agent and should be pushed to the point of tolerance. It is surprising to what extent the point of tolerance can be increased. The horizontal exercises are to be preferred. They relieve the spinal column from the pressure of the superincumbent weight and give greater range to the movement of the vertebræ. In this position the deformity in the incipient stage disappears altogether with the result that the contracted muscles of the concavity and the stretched muscles of the convexity are brought to a natural state. Abnormally contracted or stretched muscles do not respond to exercise.

The constitutional value of gymnastics is that it improves the digestion and assimilation, and stimulates metabolism. A healthy glow steals into the child's face, and he becomes like a little athlete and is capable of performing the necessary acrobatic spinal movements. The most important result, however, is the arrest of the deforming process in spite of the rapid growth of children during this period. Quite frequently after the child has been thoroughly built up, the spinal column corrects itself.

TREATMENT OF STRUCTURAL SCOLIOSIS.

Persistent deviation of the vertebræ with the continued pressure of the superincumbent weight on the displaced vertebræ, leads to structural changes in the spinal column. These structural changes, which consist of true ankylosis of vertebræ, etc., take place rapidly in the young spine because the cancellous tissue in the vertebræ of the young is soft and the disc gelatinous. In scoliotic children this softness of vertebræ and disc is increased still more.

Structural changes having once taken place, no treatment can restore the spinal column to the normal. The most fortunate result that can be hoped for is the arresting of the deformity. When the deformity is discovered late (as often happens), or the patient receives perfunctory treatment (which is the rule in incipient scoliosis to-day), the deformity advances and soon enters on the dreaded progressive stage. The deforming process of scoliosis can truly be compared to a falling tower. The tower inclines gradually yet gaining momentum, and when it has reached the point where the centre of gravity changes, it falls suddenly. This suddenness of the progressive stage can be seen after a child has absented himself several weeks from the gymnastic class for scoliotics. When he returns the convexity is grotesque and the concavity is so deep that he has actually folded sidewise. The spinal column seems to have sagged and his shortened leg, which has now become shorter, makes him limp perceptibly.

EXAMINATION OF THE BACKS OF SCHOOL CHILDREN IN THE UNITED STATES.

The writer approached a number of physicians on boards of health on the subject of examining the backs of school children. Most of them insisted that the children were examined for spinal deformity as well as for other diseases. But when questioned, it turned out that their method was merely to look for the drop or raise of a shoulder or to feel the back through the clothes for the purpose of detecting the prominence of a scapula or of a deviation of the vertebræ. It is obvious that this method is faulty. It cannot detect incipient scoliosis, which can only be diagnosticated when the back is exposed. Thus, if the truth must be told, all cases of incipient scoliosis are overlooked by the examining physician of school children, which later in life may leave them cripples. No orthopædist will undertake to make a diagnosis of incipient scoliosis by examining the spine through the clothes, just as no internist will consent to make a diagnosis of incipient tuberculosis by percussing the chest when the patient is dressed. That there are school children in the United States who have scoliosis which is undetected by the school physician, is a fact which one can learn by merely examining the history blanks of orthopædic institutions. To convince the sceptic, such patients can be introduced.

The history of the following case is one of thousands. A. G., age sixteen. Referred to the writer by Dr. M. R. During an attack of typhoid fever the nurse, while sponging him, discovered a right dorsal scoliosis. The lesion was advanced and structural changes present. The parents *never suspected* that the boy had trouble with his back.

COMPARISON OF STATISTICS.

Of the three thousand school children examined last year in Lausanne, scoliosis was prevalent in some degree in 24.6 per cent., while a report by Luther Haloy Gulick, M. D., states that of 78,401 school children examined in New York city in 1906, 424 had deformities of the spine. The report does not specify the nature of the deformity, whether it was scoliosis, Pott's disease, or round shoulders, etc. Are we to conclude from these statistics that Switzerland has twenty-five per cent. of scoliotics while New York has only one half per cent.? Undoubtedly the difference in figures is chiefly the result of the different methods of examination. The official estimate of various orthopædists is that twenty per cent. of the total population in the United States have scoliosis.

THE MASSACHUSETTS RESOLUTION.

The Suggestions to Teachers and School Physicians Regarding Medical Instruction, issued by the Massachusetts Board of Education in 1907, says: "Spinal curvature should be suspected when one shoulder is habitually raised or dropped or when the child leans to one side or shows persistent round shoulder." This resolution, adopted by the most advanced Board of Education in our country and which stands as a model for other State boards of education, has the following basic weaknesses: It blocks the way to the early recognition of the trouble. It denies the child with a tendency to scoliosis the benefit of prophylactic measures. It deprives the child in the incipient stage of valuable treatment. It advocates the policy of delay and inactivity. By the time the teacher or physician is able to notice that one shoulder is habitually raised or dropped, or that the child leans to one side, the trouble has progressed too far. Structural changes have taken place and the child will be subjected to the suffering of years of treatment and in the majority of cases will grow up deformed.

WORKING WITH THE BOARDS OF HEALTH.

In the writer's efforts to induce the Board of Health to adopt a routine examination of the backs of school children, he spoke with Dr. Hermann Biggs, of the Board of Health of New York city, who showed a sympathetic interest in the plan. The plan itself, however, has been delayed by two objections. First, the expense of more examining physicians. This seems a trifling matter, for on the one hand the community is rich enough to pay a few cents for every child for so valuable a service, and on the other hand orthopædists can be found who would be willing to give part of their time gratis for so humane an undertaking. Second, which seems a serious objection, having heard it from all sides—is that the plan is not practical because, incredible as it may seem, the parents will object to having the child's back exposed. If this modesty is based on sex the problem can be solved by having women orthopædists examine the backs of the girls and men examine the backs of the boys. Doubtless there are some parents who will object to the examination of backs in school, but once the simple laws that underlie scoliosis are explained to them, they will not object, but will give us the cooperation which is so essential in the fight against this deformity. The writer has never seen an objecting parent. He has, on the other hand, seen many of the other kind who have asked, how did it happen that the school physician who has examined the child so frequently, has never discovered this trouble? The attitude of parents in this matter is typified by the following case, in which the parent was overcome with gratitude for the following letter:

> Ethical Culture School,
> Central Park West and Sixty-third Street,
> New York City.
> June 3d. 1910.
>
> My dear Mrs. K.—It seems to me desirable to have a careful examination made of Alice's back by your physician if this has not already been done. There seems to be a curvature and possibly rotation. We have not the facilities here at the school for corrective work, and consequently I should say it would be best for you to have Alice placed in the hands of some expert in such work. The case is in a very early stage, and I should say, if properly handled, could be easily corrected.
>
> Sincerely yours,
> A. D. P.,
> Physical Director.

"I am no doctor," she said, showing the letter. "How could I know how a child's spine should look?"

OPTIMISM IN SCOLIOSIS.

Even when parents notice that one scapula in their child is more prominent than the other, in the majority of cases they hardly pay any attention to it. They do not know that there is any element of seriousness connected with this or that the trouble may grow worse. If they consult a physician, any attempt on his part to view the trouble any way but "optimistically" would result in accusing him of ulterior motives. This is often strengthened by a neighbor's advice that the child will "outgrow it." It is after the deformity has progressed that the parents become anxious. Only a notice from the board of health which has the force of authority behind it, stating that the child is threatened with scoliosis and needs immediate attention, would spur the parents on to prompt action.

The hope to stamp out this most widespread deformity lies in prevention and early treatment. How can this deformity be diagnosticated early when this important mission is still left in this country to the mother, dressmaker, and teacher, who diagnosticate the trouble only when it has advanced? A routine examination of the backs of school children by competent orthopædists would result in an early diagnosis and proper treatment. Sooner or later a routine examination of the backs of school children will be adopted in the United States. Why procrastinate at the expense of so much pain and deformity?

Every man and woman who has the real welfare of the human race at heart must lend a helping hand to bring the proper pressure on the authorities to adopt this method. A crusade, vigorous and widespread against scoliosis, must be organized in order to prevent the thousands of new recruits which are added every year to the vast army of of scoliotics in spite of the treatment of even competent men with corsets and gymnastics. With the phlegmatic sceptic and critic I want to leave this thought. There is always a possibility that you may receive words from some chance source some day that your child is so affected, but too late for good results.

24 West Forty-fifth Street.

EHRLICH'S ARSENOBENZOL: ITS TECHNIQUE AND INDICATIONS FOR GENERAL USE.

By Abr. L. Wolbarst, M. D.,
New York,

Consulting Genitourinary Surgeon, Central Islip State Hospital; Genitourinary Surgeon, Peoples Hospital; Genitourinary Surgeon to the Beth Israel Hospital and West Side German Dispensaries; Professor of Genitourinary Diseases, New York School of Clinical Medicine, etc.

The value of Ehrlich-Hata arsenobenzol,—(I suggest that it be designated "A B Z" for short, rather than "606"), has already been sufficiently demonstrated to justify our regarding it as without doubt the most effective remedy against syphilis and its sequelæ that has ever been known to medicine. Wherever it has been properly employed, whether here or abroad, the results following the use of this preparation have been uniformly of such a character as to instill the hope, if not the belief, that a far better control of syphilis than we have heretofore had is not far distant.

It is agreed by all who have studied A B Z, that it has a distinct destructive effect on the spirochætæ; in most instances, they are destroyed within from twenty-four to forty-eight hours after a single injection. Syphilitic lesions, whether old or recent, especially the former, usually succumb to this potent remedy in a most brilliant manner; this is particularly true of old gummatous deposits that have proved rebellious to mercury and iodides.

Nevertheless, we dare not yet say that this preparation is a specific against syphilis; possibly in time it may prove to be so, but for the present it is well to remember that it has its limitations and that too much should not be demanded of it, lest we find ourselves disappointed later on. My own personal experience in the clinics of Berlin observing the treatment administered by Wechselmann and others (1), and the more recent experiences in my own cases, confirm the opinion of the numerous writers who have thus far expressed their unqualified approval of the remedy in syphilis.

Professor Ehrlich very kindly gave me a liberal supply of the preparation for clinical use, and I have employed it in a considerable number of cases of various kinds. The time that has elapsed is too short to make a complete report on these cases, but a preliminary report on a few characteristic cases may safely be made as an indication of the variety of conditions in which A B Z may be employed and the measure of success that has thus far been achieved. In due time, all of them will be reported with full details.

Among the most striking, has been a case of precocious tertiary skin lesions, covering various parts of the body, with broken down gummata and mouth and tongue ulcerations that made swallowing difficult. Mercury and iodides had been resisted for two years. Within two weeks after an injection of 0.5 gramme of A B Z, the entire condition cleared up, and the patient is to-day practically well.

Another case of a similar character, with obstinate pustules some as large as a quarter, all over the patient's body, mucous patches on the tongue and throat, left iritis, and gummatous ulceration of the great toe, resisted all treatment for four months. An injection of 0.5 gramme of A B Z was given, and in two weeks, nearly all of the lesions had disappeared.

A case of tabes dorsalis, with Romberg, Westphal, and Argyll-Robertson symptoms marked, and complete ptosis of the left eyelid, duration sixteen months and resisting all treatment, improved wonderfully. In twenty-four hours after the injection of 0.5 gramme of A B Z the ptosis was relieved partially, and a day later the recovery in this regard was complete. Vision also improved in a most striking manner. The improvement has continued steadily.

Another patient with tabes dorsalis, with extreme ataxia and considerable optic atrophy, received 0.5 gramme of A B Z, in a desperate hope, that some benefit might follow. Thus far the patient has felt none of his previous pains and his gait is conceded by all who have watched him, to have much improved. His eyesight has not shown any change for the better. A baby, two months old, with hereditary syphilis, showed marked benefit after two days.

These few cases will give some idea of the results that might be expected with this potent remedy in appropriate cases. On the other hand, there have been a number of instances in which the effect has not been so striking, but in every one of them, without exception, the improvement has been more rapid and more steady than in those treated by current methods.

Technique: The technique that seems to me the most effective and the simplest of manipulation, the one that I have followed in all my work, is the following:

With a glass pipette, 10 c.c. of hot distilled water are put into a glass mortar, having a capacity of 50 c.c.; to this is added the A B Z, a little at a time, constantly stirring it with a pestle, until it is thoroughly dissolved. We now have a clear, amber colored solution, strongly acid. With another pipette, we add a four per cent. solution of sodium hydrate in sterile distilled water, drop by drop, about 0.5 c.c. of the solution for each decigramme of A B Z used, constantly stirring with the pestle. Now a thick gelatinous mass forms, in which the powder (A B Z) is precipitated; but by continuing to add the sodium hydrate solution, drop by drop, the precipitate disappears and another solution, quite clear, is now formed. This solution is very strongly alkaline, and if thus injected causes much pain. In order to diminish the alkalinity, and make the solution as nearly neutral (and consequently as painless) as possible, we add, drop by drop, through a third pipette, a one per cent. solution of acetic acid (in sterile water), constantly testing with litmus paper. When the alkalinity is reduced to a minimum, sufficient distilled water is added to make 20 c.c., and of this solution, 10 c.c. is injected into each buttock. A piece of sterile gauze is now placed over the site of the injection and held in place with two strips of adhesive plaster, forming an X. The patient should lie face downward for about half an hour, and should then be put to bed and kept there for a day or two. He should now be kept under careful observation, for at least one week, preferably a fortnight.

Certain precautions are absolutely necessary and should never be omitted. All the apparatus used for the injection should be thoroughly sterilized in the same manner as surgical instruments before operation. This includes the mortar and pestle, the syringe and needle, the pipettes, and even the steel file with which the neck of the glass vial containing the powder is cut across. The neck of the vial should be cleansed with alcohol and ether. The skin of the buttocks should be thoroughly cleansed and rubbed with ether until it is red, immediately before the injection. This helps to anæsthetize the skin and renders the injection less painful.

Another very important precaution to be observed is that the solution should be made up immediately before it is to be used, at the bedside of the patient, or in the operating room, where preferably the injection should be given. It is more than possible, that some of the unfavorable results following the use of A B Z in one of our large local hospitals, in the hands of competent observers, has been due to the fact that the solution was prepared in one place, transported to another at some distance, and there administered. It is likely that the best results are only obtained when the solution is absolutely fresh and sterile.

The operator should wash his hands carefully, and wear a sterile gown. The needle employed should be fairly large in calibre, similar to the one used in the injection of the insoluble mercury preparations.

All of these precautions are essential to the success of the procedure, not alone because we may otherwise bring sepsis to complicate the patient's condition, but in order that the seriousness of the operation should not be minimized. We are dealing with a powerful agent. The average dose, 0.5 gramme, contains about three grains of organic arsenic. Surely, the introduction of this large amount of arsenic into the patient's body, should be done with the fullest possible realization of its importance and should not be undertaken in any light vein.

Still another precaution, is to carefully examine the internal organs, and especially the kidneys, before the injection. Ehrlich has warned emphatically against the use of A B Z in disease of these organs, and also in ocular disease in which the fundus is much involved. On the other hand, Wechselmann states (2) that he has not seen any visual disturbance of any account in the many cases treated by him, and even in cases of optic atrophy he has not seen any harm result (3).

A note of warning may not be considered amiss in this connection. The time is not far distant when this preparation will be put on the market, so that it will be within easy purchase of all. Is it not reasonable to assume that it may thus fall into the hands of the charlatan or the unscrupulous, who, for a consideration, will administer it to all who come without regard to the special indications of the case? Is it safe to entrust this powerful remedy with its large dose of arsenic into the hands of such men? I submit these questions for consideration, in the fear that disastrous results may follow its indiscriminate use, and thereby bring undeserved discredit on the preparation itself and untold injury to the name and fame of its discoverer, Paul Ehrlich.

As the result of my observations here and abroad, I am convinced that the preparation, for the present at least, should be employed only in such cases as by their nature and severity demand heroic treatment, and should be administered only after a careful study of the technique and method of administration. For some time to come A B Z ought not to become a common remedy, to be readily obtained anywhere and everywhere; there should be some safeguard thrown about it so as to prevent it from falling into the hands of the incompetent and unscrupulous. I do not mean to infer that the legitimate and intelligent physician in general practice should be prevented from using the preparation in his practice. He can be relied upon to use it judiciously at the proper time, in the proper place, and under proper conditions, in the same manner as he has used the diphtheria antitoxine and other similar therapeutic measures.

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1. *Medical Record,* October 15, 1910.
2. Personal communication.
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105 East Nineteenth Street.

ACCIDENTAL DETACHMENT OF THE NORMALLY IMPLANTED PLACENTA.*

By W. S. Picotte, M. D.,
Ishpeming, Michigan.

Ante partum hæmorrhage with a normally implanted placenta, which is so frequently fatal as a complication in labor, is fortunately a very uncommon accident, but since it comes within the experience of every practitioner sooner or later and at a time when least expected, a report of a few cases which came under my care, should prove of general interest.

At the time of Hippocrates this condition was considered a frequent occurrence, but later, with the recognition of placenta prævia, it was acknowledged to be rare and to occur about once in every five hundred labors.

The ætiology of premature separation of the placenta is yet obscure and mostly theoretical, though traumatism is probably the predominating factor. Nephritis seems to receive some support, but there existed no trace of albumen in the only one of my two cases in which I had an opportunity to make the uranalysis. Chronic metritis, however, in this connection, should receive serious consideration. It is generally admitted that multiparity is an important predisposing cause; a condition which coincides with my experience, as both women had had twelve and nine pregnancies respectively.

The pathology, in its simplest understanding, consists in the laceration of the bloodvessels passing through the decidua serotina and left opened by the inability of the gravid uterus to contract. When the separation is slight and the margins of the placenta remain adherent the hæmorrhage may cease and be unimportant. Profuse concealed hæmorrhage takes place when the blood breaks through the amniotic membrane into the uterus. Sometimes, and this occurred in the cases I will now report, the blood, after detachment of the placenta, dissects its way between the membrane and the uterine wall and flows externally.

Case I. On July 10th of this year, about one o'clock in the morning, I was summoned by telephone to come in great haste to attend Mrs. V., age thirty-eight, in the eighth month of her twelfth confinement. On arriving I found her unconscious, apparently bloodless, and in a state of serious collapse. Her facies was waxy, eyes partly closed, pulse imperceptible at the wrist, and muscles generally relaxed. I was told that during the forenoon, while attempting to tear up a carpet with much effort, she had complained of feeling something give way in the abdomen. However, she retired at nine o'clock that night not feeling very well but slept. About two hours after she was awakened by slight pains and noticed she was flowing. On rising from the bed to use the chamber blood splattered over the floor like a flood, and there and then she nearly filled the chamber with blood. She called her husband who hastened for help, saying he believed his wife was dying.

An examination revealed the cervix soft, thick and dilated, about the size of a half dollar, with the amnion still intact and blood escaping moderately. There could be felt no sign of placenta near the cervix. Auscultation showed absence of fœtal heart beat. Dr. Barnett was immediately called in consultation. The foot of the bed was raised at once, heat applied to body and extremities, and a twenty-fifth grain of strychnine was given. This seemed to revive her slightly, and for a time the patient regained consciousness. A few whiffs of chloroform was given by Dr. Barnett and dilatation was gently forced. The amniotic membrane was perforated and the absence of placenta prævia was positively determined. The fluid which came was free from blood, indicating that the hæmorrhage had remained external to the amnion. A few repeated attempts to apply forceps were futile, so delivery was terminated by version with comparative ease. The placenta followed immediately with an enormous quantity of black clotted blood, indicating that it was of many hours accumulation. The patient did not rally in spite of our desperate efforts to stimulate her, and she died before we left the house, about four o'clock.

This was my first experience of the kind and I hoped to never have another, but to my amazement the following month, I encountered one which, in points of similarity, is so striking, that its history, as you will notice, begs repetition.

Case. II. About two o'clock in the morning, August 24th, Mr. G., from the Junction location, came to my room, almost exhausted, saying his wife was bleeding to death. Arriving at the bedside I found the patient conscious, but very pale, with a pulse beating so feebly and rapidly that it was almost uncountable. She had retired feeling fairly well and was awakened about twelve o'clock by labor pains and immediately discovered she was flowing. Her sister in attendance told me that the patient had filled one chamber with blood and saturated several large cloths and penetrated the mattress.

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*Read at a meeting of the Marquette-Alger County Medical Society, December, 1909.

Her pains then were coming every five or six minutes and an examination revealed cervix thin and slightly dilated. The amniotic membrane had not ruptured and the head could be felt through the cervix but no signs of placenta prævia could be detected by the finger introduced as high as I could reach. By external palpation a large ligneous mass could be plainly felt at the seat of the normally attached placenta. No fœtal heart beat could be heard and the bleeding then was not alarming. Dr. Burke was called and before deciding to interfere two quarts of normal salt solution was given hypodermically in the breasts. By that time the os had pretty well dilated, the membranes were ruptured, and under the effect of a few inhalations of chloroform, forceps was applied and labor ended in a few minutes. The placenta came, immediately followed by enormous hard black clots, which had undoubtedly been forming outside of the amnion for several hours past. Thirty minims of ergotol was given hypodermically with strychnine and camphorated oil, the latter being continued at regular intervals all day. The patient soon recovered from the anæsthetic and during the day seemed to regain some strength but that evening she suffered much from dyspnœa, her pulse became weaker and thready, and death relieved her about two o'clock the following morning.

Accidental detachment of the normally implanted placenta before labor has commenced, is undoubtedly far more serious than placenta prævia and eclampsia. From my observation of these two cases I conclude that there seems no salvation for the fœtus and very slight chances of recovery for the mother. With the child, death follows interrupted nutrition. In the case of the mother, anæmia is directly or indirectly the cause. Of course, if a physician is at hand when the first symptoms appear, the mortality rate might be lowered, but in general practice this is ordinarily impossible. Even were it otherwise, the question of an early recognition of this condition before the appearance of blood externally is sometimes difficult and has been mistaken for other morbid phenomena, and women have died without delivery.

If seen before too much blood has been lost, the life of the patient depends greatly on the quick and dexterous action of the accoucheur, and no time should be lost to empty the uterus. On the other hand, when we are brought in presence of a moribund, as were the patients in the two cases I just described, in my opinion there arises a more perplexing situation. There, we have a patient still displaying some vitality; here, one already so near bloodless that every drop remaining, as it were, is of extreme count and in which the collapse is so great that the shock attending artificial delivery might cause immediate death. In the latter, I firmly believe that some attempt to stimulate should first be made and part of lost blood replaced by hypodermoclysis before interfering with the womb. In support of this my reference to the two cases in question. All things considered, they were in the same condition when seen several hours after onset of the hæmorrhage. In the first case, we were somewhat unprepared and delivery was accomplished at once and the patient died within an hour. In the second, two quarts of normal salt solution was injected before delivery and the patient acted better, showed more resistance to shock, and lived nearly twenty-four hours.

Correspondence.

LETTER FROM LONDON.

The Crippen Case.—Ehrlich's "606" in the Treatment of Syphilis.

LONDON, *October 26, 1910.*

The recent Crippen case will remain a *cause célèbre* for several reasons, not the least being its remarkable medicolegal interest. The medical expert witnesses played a large part in this case; indeed, it may be said that the case for the prosecution rested almost entirely on the expert testimony. In the first place, the discovery of a piece of skin with a scar on it was the most important piece of evidence of identity, as it was known that the murdered woman had a scar on the lower part of the abdomen as the result of an operation. The defense denied the presence of a scar and maintained that the condition found might have been produced by the folding of the skin on which pressure had afterward been applied. The methods of recognition of scar tissue were fully discussed in court, and the judge and jury had the opportunity of examining sections through the scar under the microscope.

This case is also unique in being the only one recorded—at least in this country—of homicidal poisoning by hyoscine. The methods of isolation and identification of hyoscine post mortem were fully described by Dr. Willcox, the Home Office analyst, and also the points of distinction between the closely related alkaloids hyoscyamine and atropine.

Another point discussed was the method of administration of hyoscine. From the point of view of the alienist or psychologist the mental condition of the prisoner must also have been an interesting study.

At a meeting of the Hampstead Division of the British Medical Association a discussion took place on the recent advances in the treatment of syphilis, especially as it affected the Wassermann reaction and treatment by "606." The discussion was opened by Mr. McDonagh, who said that, though it did not fulfil all of Koch's postulates, the *Treponema pallidum* was accepted by all as the cause of syphilis.

The nature of a sore need not be left in doubt in any case at present, since the presence or absence of the protozoon would definitely decide the diagnosis. Treatment could and should be begun as soon as the patient was seen. The question of excision of the chancre was one which had been seriously considered.

It was important to recognize that when excision was suggested the infection might have spread to the regional lymphatic glands, and therefore the removal of the primary sore would not remove all possibility of a spread of infection. Even a gumma in tertiary syphilis had been shown to be infective. However, it was possible to check the disease by excision of the primary sore, and he instanced two cases in which this had been done after fourteen days. No secondary symptoms occurred. Syphilis could be treated by the application of mercury either in the form of inunction, injection, or internal administration. The speaker was satisfied that the inunction method was the most efficacious, that the treatment by injection was rapid and powerful, and that medication per os was the least effective. Turning to the Wassermann reaction, he said that effective treatment converted a positive reaction into a negative one. The positive reaction was frequently found after energetic internal treatment. Further, he contended that the degree of anæmia was more marked after prolonged internal administration than after inunction or injection. Potassium iodide did not affect the Wassermann reaction.

He then proceeded to deal with Ehrlich's new remedy. In his search for a remedy Ehrlich resolved that the drug found must be parasitotropic, but not organotropic. Parasitotropic bodies fell within three groups, the first including the metals arsenic and antimony, the second, bodies containing an azo group such as *Trypanrot,* and the third containing the complex basic triphenylmethane dyes. *In vitro,* the substance which was popularly called "606" killed spirilla in a dilution of one in 6,000,000. Atoxyl acted quite differently from "606," in that it failed to exercise the same action on the spirochætæ in the body as it did in the test tube. When Ehrlich introduced arsacetin it had been suggested that, in order to exclude those persons who were susceptible to its toxic action, a percutaneous or conjunctival test of the nature of the von Pirquet or Calmette test should be employed. This preliminary testing, however, was not necessary in the case of "606." The parasitotropic substances acted partly by killing the parasite and partly by liberating the chemical substances contained in the bodies of the parasites, which killed off the remainder. That "606" acted in this way was shown by the fact that larger doses were required to cure an early case with a primary sore than a late case with gummata. Again, the case reported of an infant suffering from congenital syphilis being cured by sucking at its mother's breast after she had been injected with "606," in which case it had been proved that no arsenic passed into the milk, supported this view. In dealing with the question of dose, he stated that at first the doses employed were too small. He now gave 0.5 or 0.6 gramme, and believed that the latter dose was satisfactory. Ehrlich was now sending out capsules with 0.7 and 0.8 gramme in each.

Mr. McDonagh spoke of the pain produced by the injection. The substance in solution had to be rendered faintly alkaline, which he effected by means of sodium hydrate. He preferred to inject into the substance of the trapezius rather than into the glutæi, but in some cases it was necessary to choose the latter situation. Krohmayer had recommended giving the substance in emulsion in liquid paraffin, but theoretically it would appear likely that the absorption from such injections would be too slow. Finally, he pointed out that "606" was of no use as a prophylactic. He then turned to the clinical side of the question. In the primary stage every case he had treated had responded immediately to one injection and the result had been most striking. In no case had a secondary rash developed, and the Wassermann reaction had invariably become negative. In septic cases the drug acted most promptly, and extraordinary results had occurred. He did not recommend out patient treatment with the drug, as the patients would not rest after the injection. In the second stage all the signs usually disappeared after one injection of 0.6 gramme. This was more especially true of malignant syphilis. In tertiary syphilis its action was remarkably rapid, and Mr. McDonagh cited cases of ulcerative sore throat, elephantiasis with gummata, and syphilitic meningitis.

As regards toxic symptoms, he mentioned that as yet no case of blindness had resulted from its use, although Ehrlich had up to the present received reports of 12,000 cases. He had had one death in connection with the injection. A diagnosis of cerebrospinal syphilis had been made, and the patient was *in extremis.* The man died, but post mortem the case was discovered to be one of disseminated sarcoma. He had, further, observed two cases of recurrence in eighty cases. These patients had received only 0.4 gramme. With regard to the question of the cure of syphilis by "606," he expressed himself very cautiously. It would take a long time before this question could be definitely settled.

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Therapeutical Notes.

The Treatment of Flat Warts in the Young.—According to Schreiber (*Presse médicale,* September 3, 1910), Comby has obtained good results in the treatment of flat warts in infants by the use of the following:

℞ Ichthyol, ...gr. xlv;
Glycerite of starch, ...℥i.
M. et sig.: Apply at night.

Morning and evening before each principal meal give the child a powder of the following composition:

℞ Calcined magnesia, ...gr. iv;
Sugar of milk, ...gr. iv.
M. et ft. pulv. No. xx.
Sig.: One to be taken morning and evening in a spoonful of water.

The child should be douched with lukewarm water (93° to 95° F.) night and morning, being rubbed briskly afterwards with a dampened cloth.

In an article contributed to the *Practitioner* for October, 1910, E. Graham Little observes that the treatment to be adopted for flat warts is similar to that employed for common warts, except that scarring is more important to avoid when they occur, as is usual on the face; and they are on the whole more amenable to milder local remedies. He cites the following formula of Dubreuilh from the *Pratique dermatologique:*

℞ Wool fat, ...ʒv;
Calomel, ...gr. xv;
Salicylic acid, ...gr. xxx;
Resorcin, ...gr. xxx.
M.

This, he says, causes exfoliation and so removal.

For Gastric Acidity.—Bing (*Riforma medica*) prescribes the following in the treatment of gastric acidity:

℞ Calcined magnesia, ...ʒi;
Lime water, ...℥ii;
Peppermint water, ...℥ii;
Syrup of orange flowers, ...℥i.
M. et sig.: One tablespoonful every two hours.

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THE FIASCO OF PRELIMINARY EDUCATION.

Great efforts have been made of late years to bring about a better preliminary education among persons intending to enter upon the study of medicine. Such an improvement would have two good effects; it would enable the medical student to understand the subjects of his special study more readily, and it would qualify him to do his part subsequently in maintaining medicine as a learned profession in the eyes of the public. The medical schools and the State examining boards appear to have done their best toward rendering these efforts effective, but they have had to rely largely on college diplomas, high school certificates, and the like, and consequently, it seems to us, they have not accomplished all that they set out to do. Indeed, we cannot help thinking that there has been retrogression rather than progress, and we are inclined to the view that the medical student's preparatory education was better fifty years ago than it is to-day. It is only fair to say that we are founding our estimate solely on the recent medical graduate's literary facility, but we think it will be conceded that no man can be looked upon as well educated unless he is able to express himself clearly and correctly in his mother tongue, and to make proper use of such foreign terms as are often employed by writers in that language.

The trouble seems to us chargeable to those who undertake the general education of our youth, and the worst of the matter is that they appear incapable of improvement, for too many of them are themselves illiterate. It is exceptional to find a college announcement which does not read as if it might have been written by the office boy. And the textbooks are frequently at fault. For example, Liddell and Scott's *Greek-English Lexicon* contains the following ridiculous statement: " Ἀσκίτης νοσος, a kind of dropsy." That lexicon has been a standard in schools and colleges for more than half a century and it ought to have undergone many careful revisions; yet it still teaches that the masculine adjective ἀσκίτης, when used substantively (as in our medical term ascites), is in agreement with the feminine noun νόσος understood, whereas the noun really understood is the masculine ὕδρωψ. After this, one can hardly wonder at the frequency of such barbarisms as "this data" and "this insignia" in contemporary literature.

The results of such blunders are sometimes amusing; for instance, "insignias" was recently printed on the programme of an important association. One might as well write "cherubims" and "seraphims." The performance reminds us of an achievement in the *United States Pharmacopœia* a few decades ago. The ancient expression δια χυλῶν (χυλῶν being a genitive plural) was turned into a supposed Latin equivalent, "diachylum," which was treated as a nominative singular and the genitive "diachyli" invented for it. In the course of ten years the mistake was discovered and corrected, and that is more than can be said of Liddell and Scott's slip. Such monstrosities as "urinalysis," "ruptured extrauterine pregnancy," and "double castration" originated in the medical profession and cannot be directly charged to the general educators, though by taking greater care in their own work they might have gone far to prevent them.

The "simplified" spelling, the pet of many a college professor, does not seem to have made much headway in spite of the quasicompulsory measures taken to boost it. There are, however, still a few good souls who think they have done something to cackle over when they have written "thru" for through. The "bobtailed" spelling, which is found chiefly in medical literature, has not yet distinctly entered upon its decadence, though it was dropped by the chemists after a very short trial. Along with the suppression of Latin diphthongs, it is in high favor, we regret to say, with many medical writers in this country, and it is particularly prized by the general run of typewriter girls, for it relieves them of some of their difficulties in spelling chemical words and admits of their striking the simple letter e instead of ae or oe, with the subsequent trouble of putting "the bonnet" on. It has made us the laughing stock of the rest of the English speaking world. In our opinion it is sure to disappear, though there are still many sticklers for it. For example, the *Journal of the American Medical Association,* in its issue for November 5th, said in a review of *Lippincott's New Medical Dictionary:* "The spelling 'anæsthesia,' 'œsophagus,' etc., are [*sic*] preferred to 'anesthesia,' 'esophagus,' which is to be deplored as a step backward."

So, then, when you have robbed a man, it is "a step backward" to make restitution, is it? The simile is not forced, for we see no moral difference between rifling a dead man's pockets and mutilating a dead language. As we view the matter, Dr. Cattell, who prepared the dictionary alluded to, is entitled to great credit for stemming the tide of error, and we still hope that such improvements will be made in elementary education as in the future will save us from falling into errors like those we have mentioned.

THE DEPORTATION OF INSANE IMMIGRANTS.

The deportation of immigrants is at best a sad affair. Without denying the necessity of rigidly excluding the mentally, morally, or physically unfit, and even while urging better enforcement of the law which makes this possible, we may still welcome any movement to soften the rigors of the law's enforcement. However hard it is on any immigrant to find the gates of the promised land closed to him and be obliged to return to the fatherland with the burdens which he sought to escape increased by a load of debt, there must be an added bitterness for those who are ill in body or in mind and who have perhaps been excluded for that cause alone.

Fortunately the immigration law contains provisions which make it possible to modify the usual procedure in the case of immigrants who are unable to be returned at once with safety and for those who need special attention on the journey. One section of the present law provides that "upon the certificate of a medical officer of the United States Public Health and Marine Hospital Service to the effect that the health or safety of an insane alien would be imperilled by immediate deportation, such alien may, at the expense of the 'immigrant fund,' be held for treatment until such time as such alien may, in the opinion of such medical officer, be safely deported." The former immigration law contained a general provision of this sort and it was always liberally construed in the case of those physically ill. In the case of insane immigrants, however, hospital care was not provided. Immigrants who arrived with acute mental disease were kept on board their vessels and deported as soon as the vessels sailed again, without reference to the suffering which this procedure involved or to the effect which it might have upon the outcome of their disease. Now they are cared for at Ellis Island in a psychopathic pavilion in connection with the Immigrant Hospital, where trained attendants and physicians experienced in the care of the insane give them the kind of treatment which modern ideas demand. At other ports arrangements have been made with State authorities to care for insane immigrants until they are in condition to travel with safety.

So at the present time insane immigrants are well cared for while they are in the custody of the United States government. It is a matter of much concern to us, however, how they fare while in the charge of the steamship companies, for no one will deny that our responsibility for these unfortunate people extends to their final destination in Europe. Deportation of insane immigrants is not a matter of relatively small importance or of infrequent occurrence. The total number of immigrants denied admission at Ellis Island and deported from State institutions in which they have become public charges is nearly 1,000 a year. How they fare on the voyage, whether they are humanely restrained when that is necessary or properly cared for and guarded from harm, and, above all, whether they ever reach their distant homes are matters of much importance. The kind of care insane immigrants have received on ship board is pretty well known by those who have been able to observe it. Unnecessary restraint, the care of women by men, improper feeding, and general neglect are known to have been the rule. That some lines were not guilty of these practices only shows that humane care of insane people at sea is possible when there is a desire to meet the responsibility.

The New York State Charities Aid Association has taken great interest in the care of insane immigrants for several years, and, through the efforts of that association, an amendment to the immigration law was secured which, it was thought, would remedy the abuses known to exist. The present law, that of 1907, provides that "when in the opinion of the Secretary of Commerce and Labor the mental or physical condition of such alien is such as to require personal care and attendance, he may employ a suitable person for that purpose, who shall accompany such alien to his final destination, and the expenses incident to such service shall be defrayed in like manner [by the steamship company]." Apparently nothing could be more definite than this, but it is very interesting to learn from the last annual report of the State Charities' Aid Association how the law was finally interpreted.

The new law went into effect on February 20, 1907, but no rules were framed by the Immigration Service to carry out this provision until the State

Charities Aid Association called attention to the omission in May, 1907. Then rules were adopted and the law was put into operation. It is the opinion of those who observed the operation of the law that the abuses and hardships which had been common under previous arrangements were largely done away with. This state of affairs continued, according to the report, until December, 1907, when the strenuous objections of the steamship companies resulted in amendments of the rule which, in effect, abrogated the law. The department agreed to accept, in place of the attendance required by law, certain statements from the steamship companies as to the condition of insane aliens during the voyage and receipts from the persons to whom they were delivered at their final destination. It became apparent that the old conditions were recurring, and in July, 1909, it was learned by the State Charities Aid Association that no efforts were being made to secure from the steamship companies the information required. A case was followed up only when "any one made inquiry as to a particular alien." Representatives of the association learned at Ellis Island that the statements required of the steamship companies were returned in but very few cases. In some which were examined the reports were incomplete or inconclusive. A number of cases in which reports were lacking were selected at random by the association and letters of inquiry were addressed to the friends or relatives to whom the insane immigrants had been sent, asking how they fared on the journey and in what condition they reached home. Answers were received to about one third of the letters sent, and in about one third of these replies it was stated that the aliens had suffered from neglect or had never reached their homes.

So, in the end, the matter rests just where it did in the beginning, in the hands of the steamship companies. The report on steerage conditions which was presented to Congress last year by the Immigration Commission and the fact, commented upon in every annual report of the Commissioner General of Immigration, that no means have yet been devised to deter steamship companies from bringing aliens with dangerous contagious diseases and thus exposing thousands of passengers to disease, teach us how much we can expect from the humanity of the steamship companies. It is difficult to point to a remedy for these conditions. It might be better to admit our inability to force steamship companies to comply with our laws and for the government to assume the expense of deporting insane immigrants properly than to continue a hopeless wrangle in which, whatever the outcome, the immigrants will continue to suffer.

PROTECTIVE INOCULATION AGAINST TYPHOID FEVER IN THE UNITED STATES ARMY.

In an editorial article published in our issue for October 29th we cited Major F. F. Russell, of the Army Medical Corps, as having said in his recent Carpenter lecture: "In our army, among 10,000 inoculated men there developed only fifty-six cases of typhoid, with five deaths, while 272 cases arose, with forty-six deaths, among 8,000 noninoculated." We are glad to learn from Major Russell that we were in error. Our statement, he says, does not apply to the United States Army at all, but to the British Army in India. In our own service, on the contrary, he adds, among 13,000 men inoculated there have been reported only five cases of typhoid fever, and not one of them was fatal. Four of the five cases were extremely mild, and in the absence of blood cultures there is reasonable doubt as to the correctness of the diagnosis. Among the six sevenths of the army that have not been inoculated there have been (in the same length of time, we presume) 418 cases with thirty-two deaths. The argument in favor of the protective inoculation is thus rendered all the stronger.

PRIMARY CANCER OF THE VAGINA.

Silas Lindqvist, in *Upsala Läkareförenings Förhandlingar* for September, reports two cases of primary carcinoma of the vagina. One case occurred in a woman, twenty-nine years old, in whom the entire posterior vaginal wall was involved. Schröder's operation was performed, but proved ineffectual, and in six months it was necessary to resort to complete extirpation of the vagina, uterus, annexa, and pelvic connective tissue by the abdominovaginal method. The rectum was not involved, nor the pelvic lymph glands.

Lindqvist considers the advantages of the combined method to be that the abdominal incision renders it possible to remove the cancerous tissue *en masse* and from the centre to the periphery, which lessens the chances of metastatic infection of lymph vessels; that the bladder can be more easily dissected through the vagina; that it is easier to remove the tumor after its base has been undermined both from above and from below; and that in freeing the vagina from above only one is often misled by its stretching into thinking that more has been dissected out than is actually the case. After this operation there was a recurrence in a few months, so Lindqvist advises immediate resection or extirpation of the rectum when the posterior vaginal wall is extensively involved; therefore the Pryor-Himmelfarb method seems the best one.

Obituary.

NATHANIEL PENDLETON DANDRIDGE, M. D., of Cincinnati.

This eminent surgeon died on Sunday, November 6th, at the age of sixty-four years. He was a native of Cincinnati and a graduate of the College of Physicians and Surgeons, of New York, of the class of 1870. Soon after taking his degree he became a hospital surgeon and a professor of surgery in Cincinnati. He was a skilful practitioner and a man of impressive and genial personality.

News Items.

The Harben Lectures of the Royal Institute of Public Health, of London, for 1912, will be given by Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, New York.

The Syracuse Academy of Medicine held a special meeting on Friday evening, November 11th, for the purpose of considering the report of the Health Committee on the typhoid situation in that city.

The Mount Sinai Ex-Residents' Alumni Association.—At the last meeting of this association, held on October 8th, Dr. Morris Weinstein was elected president, Dr. Aaron Barlow, vice-president, and Dr. David Rosenfeld, treasurer.

Yellow Fever at Honolulu.—It is reported that the first case of yellow fever ever known in the port of Honolulu was discovered aboard a Japanese cruiser which arrived there on October 30th from Manzanilla, Mexico. The steamer is held in quarantine.

The First District Branch of the Medical Society of the State of New York met in annual session in Goshen recently and elected the following officers: President, Dr. W. Stanton Gleason, of Newburgh; vice-president, Dr. D. B. Hardenburgh, of Middletown; secretary, Dr. C. E. Denison, of New York, reelected; treasurer, Dr. J. E. Sadlier, of Poughkeepsie, reelected.

The Eastern Medical Society of the City of New York held a stated meeting on Friday evening, November 11th. The paper of the evening was read by Dr. Joseph Fraenkel on Internal Secretions. Dr. Hyman Climenko presented a patient showing a disturbance of the internal secretions, and another patient with epilepsy caused by depressed fracture of the skull.

A Chair of Experimental Pathology to be Founded in the Northwestern University Medical School.—Announcement has been made of the receipt of a gift of $200,000 from Mr. James A. Patten, of Chicago, to the Northwestern University, to be used to found a chair of experimental pathology in the medical school. A special study will be made of pneumonia and tuberculosis.

Graduating Exercises at the German Hospital Training School for Nurses.—The board of trustees of the German Hospital and Dispensary, of New York, has issued invitations to the graduating exercises of the nurses of the German Hospital Training School, on Thursday afternoon, November 24th, at four o'clock. The exercises wil be held in Krackowizer Hall, Anna Ottendorfer Dispensary Building.

A Two Million Dollar Endowment Fund for the American National Red Cross Society.—President Taft is appointing special committees in the principal cities of the United States to assist in raising an endowment fund of $2,000,000 for the American Red Cross Society. A general committee composed of these special committees will have Secretary of the Treasury Franklin McVeagh as chairman.

Dr. Wiley to Lecture in New York.—Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, Department of Agriculture, will deliver two lectures at Cooper Union on November 12th and 19th. The subject of his first address will be The Importance of a Fresh, Clean, Food Supply in Cities, and of his second Chemical Services in Public Sanitation. The lectures are given under the auspices of the Board of Education, and are free to the public.

The Medical Department of the University of Vermont was opened for its fifty-eighth annual session on Tuesday, November 1st, with an entering class as large as that of the preceding year. President Buckham presided, and addresses were delivered by Dr. J. C. Rutherford, of Providence, R. I., and Dr. H. C. Tinkham, dean of the department.

The Tuberculosis Sanatorium of the Metropolitan Life Insurance Company.—The Metropolitan Life Insurance Company has changed from Sullivan to Saratoga county the location of its proposed tuberculosis pavilion for employees. The company has filed with State Health Commissioner Dr. Eugene Porter an application for permission to construct a sanatorium at Mount McGregor.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on December 15th are the following: Physician, regular; physician, homœopathic; chemist to the Department of Agriculture. Application blanks should be filed on or before December 8th. For detailed circular and application blanks address the State Civil Service Commission, Albany, N. Y.

The Philadelphia County Medical Society has nominated officers for 1911 as follows: President, Dr. Christian B. Longenecker and Dr. Charles W. Burr; first vice-president, Dr. Levi J. Hammond; secretary, Dr. William S. Wray; assistant secretary, Dr. Alexander R. Craig; treasurer, Dr. Collier L. Bower; counsellor, Dr. Lewis H. Adler, Jr.; directors, Dr. Herman B Allyn, Dr. G. Morton Illman, and Dr. Edward A. Shumway. There will be no election until the next business meeting, which will be held in January.

The Philadelphia Psychiatric Society.—At a regular meeting of this society held on Friday evening, November 11th, the programme consisted of a "symposium" on the care of the insane of Pennsylvania and particularly of Philadelphia. Dr. Theodore Diller, of Pittsburgh, read a paper entitled The Pressing Need for More Adequate and Better Provisions for the Insane and Other Delinquent Classes in Pennsylvania. Dr. F. X. Dercum, of Philadelphia, spoke on the subject of State *versus* county care of the insane. An interesting discussion followed.

Poughkeepsie, N. Y., Academy of Medicine.—At a recent meeting of this organization the following resolution was adopted: "Resolved, that the Poughkeepsie Academy of Medicine heartily endorses the action of the Board of Health of the city of Poughkeepsie in establishing a tuberculosis hospital on the site known as the Pendell farm." The following officers were elected: President, Dr. A. L. Peckham; vice-president, Dr. F. W. Parsons; secretary, Dr. H. A. Gribbon; treasurer, Dr. George Lane; trustee for three years, Dr. J. E. Sadlier.

The Medical Society of the Borough of the Bronx.—A stated meeting of this society was held on Wednesday evening, November 9th. Dr. Henry Roth reported a case of papilloma of the bladder. Dr. M. S. Kakels read a paper entitled Concerning Ehrlich's 606. A paper entitled Tumors of the Bladder was presented by Dr. John F. Erdmann and Dr. J. F. McCarthy. Among those taking part in the discussion were Dr. Parker Syms, Dr. Henry Roth, and Dr. L. M. Kahn. Officers for 1911 were nominated. The annual dinner of the society will be held on December 7th.

The Interstate Federation of Homœopathic Medical Societies of New York and Pennsylvania held its seventh annual session in Binghamton, N. Y., recently, and elected the following officers for the coming year: President, Dr. Reeves B. Howland, of Elmira; first vice-president, Dr. E. M. Cowell, of Athens, Pa.; second vice-president, Dr. Roth, of Wilkesbarre, and secretary and treasurer, Dr. Lynn A. Martin, of Binghamton. Dr. Cowell was reelected as first vice-president. It was decided at the final evening session to hold the next annual meeting of the Federation in Scranton in October, 1911.

Physicians in Politics.—Several physicians appeared among the candidates at the election on Tuesday, the successful ones including Dr. John J. Kindred, of Long Island City, who was elected to Congress, and Dr. Frank E. Wilson, of Brooklyn, who has already served for two terms in Congress, but who has latterly been engaged in practice. Dr. Thomas P. Scully, of Rome, N. Y., who was a candidate for Secretary of State, Dr. Abraham F. Lent, of Brooklyn, candidate for member of State Assembly, and Dr. William I. Sirovich, of Brooklyn, who was nominated for the post of State Treasurer, were defeated.

The Medical Society of the County of Warsaw, N. Y.—At the annual meeting of this society, held in Warsaw on October 11th, the following officers were elected: President, Dr. P. S. Goodwin, of Perry; vice-president, Dr. W. N. Martin, of Cowlesville; secretary and treasurer, Dr. L. H. Humphrey, of Silver Springs.

The Medical Society of the County of Columbia, N. Y., held its annual meeting in Hudson, on October 25th, under the presidency of Dr. L. Van Hoesen. Officers were elected as follows: President, Dr. R. C. Waterbury, of Kinderhook; vice-president, Dr. G. W. Bedder, of Philmont; secretary and treasurer, Dr. L. Van Hoesen, of Hudson..

The Medical Society of the County of Ontario, N. Y., met in annual session in Canandaigua recently and elected the following officers to serve for the ensuing year: President, Dr. H. C. Buell, of Canandaigua; vice-president, Dr. John A. Robson, of Halls Corners; secretary-treasurer, Dr. D. A. Eiseline, of Shortsville; censors, Dr. C. F. Neider, of Geneva, and Dr. S. R. Wheeler, of East Bloomfield.

Richmond, Va., Academy of Medicine.—At a regular meeting of the Richmond Academy of Medicine and Surgery, held on Tuesday evening, October 25th, the programme included the following papers: The Relation of Diverticulitis and Carcinoma of Sigmoid and Rectum, by Dr. Louis D. Wilson, of Rochester, Minn.; Skin Diseases in the Negro, by Dr. Thomas W. Murrell; Treatment of Skin Cancer, by Dr. J. B. Fisher.

Dr. White to Leave the University of Pennsylvania.—Dr. J. William White, for a number of years the holder of the John Rhea Barton professorship of surgery in the University of Pennsylvania, will relinquish his connection with the institution, as previously planned, despite a recent request by the members of the 1911 and 1912 medical classes that he remain until the end of the college term. The trustees of the university expressed themselves as entirely willing to agree to the suggestion, but Doctor White was obliged to adhere to his determination to withdraw.

Personal.—Dr. Edmund L. Cocks, of New York, was appointed consulting dermatologist to the Harlem Hospital, at a meeting of the board of trustees held on November 3d.

Dr. George W. Norris, of Philadelphia, has been appointed assistant physician to the University of Pennsylvania Hospital.

Dr. Samuel D. Risley has been elected as the representative of the Society of the Alumni of the Medical Department of the University of Pennsylvania on the Board of Managers of the Philadelphia Hospital.

New York and New England Association of Railway Surgeons.—The twentieth annual meeting of this association was held at the Hotel Astor, New York City, November 3d and 4th, under the presidency of Dr. L. M. Bingham, of Burlington, Vt. The following officers were elected to serve during the ensuing year: President, Dr. E. A. Goodwin, of Binghamton, New York; first vice-president, Dr. Walter Lathrop, of Hazleton, Pennsylvania; second vice-president, Dr. J. W. Le Seur, of Batavia, New York; corresponding secretary, Dr. George Chaffee, of Brooklyn, New York; recording secretary, Dr. C. A. Pease, of Burlington, Vermont; treasurer, Dr. J. K. Stockwell, of Oswego, New York. The time and place of meeting were left to the executive committee.

The Buffalo Academy of Medicine.—A regular meeting of the Section in Surgery was held on Tuesday evening, November 1st. The chief feature of the programme was a paper by Dr. Roswell Park entitled Man's Inhumanity to Man, accompanied by lantern slide illustrations depicting methods of torture in vogue during mediæval times. Dr. Charles W. Bethune read a paper on Dilatation of the Urethra, which was well received. The next meeting of the section will be held on December 6th, and the paper of the evening will be read by Dr. Alexander B. Johnson, of New York, on Surgery of the Kidney. At a meeting of the Section in Medicine, to be held on November 15th, the evening will be devoted to a discussion of Epidemic Poliomyelitis. Dr. Bernard Sachs, of New York, will read a paper on the subject and there will be a general discussion.

The Alumni Association of the Medical School of the University of Kansas.—At a meeting of the executive committee of the association, held in Lawrence, Kansas, recently, the following officers were elected: President, Dr. George M. Gray, of Kansas City, Kas.; vice-president, Dr. Marian Truehart, of Sterling, Kas.; secretary, Dr. H. P. Kuhn, of Kansas City, Mo.; members of the executive committee, Dr. C. C. Nesselrode and Dr. Logan Clendening. It is said that forty-eight per cent. of the alumni of the school are practising physicians in Kansas, and a movement has been started to enlist their active assistance in working for a bigger and better medical school.

The American Public Health Association will hold its 1911 meeting in Havana, Cuba, from December 4th to 9th. The prospect of having the association again in Havana has aroused much interest among the physicians there. The Academy of Medicine has offered its building for the general section meetings. The Hotel Sevilla will be the headquarters of the association. A few years ago a meeting in Havana would probably have discussed yellow fever. The changed situation in Cuba with respect to that disease is shown by the fact that yellow fever has been so completely extinguished on the island that the local physicians desire rather that tuberculosis be given the most prominent place. The question of the milk supply will also be considered.

American Academy of Medicine.—The fourth midyear meeting of this academy will be held in the Lafayette Hotel, Buffalo, on Thursday and Friday, December 1st and 2d, under the presidency of Dr. Charles S. Sheldon, of Madison, Wis. The meeting will consist of a conference on the sociological influence of hospitals and dispensaries. Thirteen papers are listed in the advance programme which has just been issued, and the meeting promises to be of very great interest. The thirty-sixth annual meeting of the organization will be held in Los Angeles on June 24 and 26, 1911. Two subjects selected for discussion at the meeting are: 1, To what Extent are Suicides and Other Crimes against the Person Due to Suggestion from the Press? 2, Should there be Two Degrees in Medicine?

Ohio State Medical Association.—The seventh annual meeting of the second councillor district of this society was held in Springfield on October 25th. The morning session was devoted to clinics at the city hospital. In the afternoon addresses were delivered by Dr. George W. Crile, of Cleveland, Dr. Park Lewis, of Buffalo, Dr. Frederick, of Cleveland, and Dr. A. C. Croftan, of Chicago. In the evening the annual banquet was held. Dr. B. McClellan, of Xenia, ex-president of the State society, was toastmaster, and among those who spoke were Dr. C. A. L. Reed, of Cincinnati, Dr. Horace J. Whitacre, of Cincinnati, and Dr. R. E. Skeel, of Cleveland, president of the State society. The following officers were elected: President. Dr. C. L. Minor, of Springfield; secretary, Dr. H. D. Rinehart, of Dayton; treasurer, Dr. B. R. Maldon, of Xenia.

The Association of Military Surgeons of the United States.—The nineteenth annual convention of the association opened in Richmond, Va., on November 1st. Among the delegates were representatives from the governments of Great Britain, Canada, France, Germany, Mexico, China, and Guatemala. The foreign visitors included Dr. D. Ruette, of the surgeon general's office of France; Dr. Kling-Sen Yau and Dr. Liang-Kiang Chang, of the medical corps of the Chinese army, and Lieutenant Colonel George S. Rennie, president of the Association of Military Surgeons of Canada. When the convention was formally opened Governor Mann, of Virginia, and Mayor Richardson, of Richmond, extended the State and city's welcome to the delegates. The relation of the Army to the National Guard was the subject of general discussion on November 2d, the Navy on November 3d, and on November 4th, the closing session, was devoted to a discussion of the United States Public Health and Marine Hospital Service. The following officers were elected: President, Surgeon General George H. Torney, of the Army; vice-presidents, Surgeon Charles P. Wertenbaker of the Marine Hospital Service, Surgeon William C. Braisted of the Navy, and Colonel Charles Adams, Chicago, Surgeon General of Illinois; treasurer, Major Herbert A. Arnold, N. G. Pa., Ardmore, reelected.

Vital Statistics of New York.—During the week ending October 29, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,171, corresponding to an annual death rate of 12.72 in a thousand of population, as compared with a rate of 14.38 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 13.78; the Bronx, 12.46; Brooklyn, 12.04; Queens, 9.04; Richmond, 11.45. The deaths of children under five years of age numbered 374, of whom 271 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 101; over five years of age, 109. There were 8 deaths from suicide, 3 from homicide, and 56 due to accidents.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 5, 1910:

	October 29th.		November 5th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	456	142	518	151
Diphtheria and croup	245	18	315	23
Measles	85	1	97	7
Scarlet fever	85	2	127	5
Smallpox	..	..	..	..
Varicella	39	..	43	..
Typhoid fever	113	14	86	15
Whooping cough	41	3	44	3
Cerebrospinal meningitis	5	7	6	3
Total	1,069	187	1,236	209

A Bronze Tablet in Memory of Dr. Albert B. Prescott.—Students and colleagues of the late Dr. Albert B. Prescott, once dean of the School of Pharmacy and director of the chemical laboratory of the University of Michigan, propose to place a bronze tablet in his memory in the new chemistry building of the university. Dr. Prescott for many years advocated before the Regents the building of a new chemical laboratory, adequate to the needs of the growing university; and although he did not live to see the realization of his plans last year, it is felt that the new chemistry building is largely due to his efforts. Therefore, it has been considered fitting that the building should in some sense be a memorial of him, and should bear some sort of inscription dedicated to his memory.

The Seventh International Congress of Dermatology and Syphilology will be held in Rome, from September 25 to 29, 1911. A general letter has been sent out by the president, Dr. T. de Amicis and by the general secretary, Dr. G. Ciarrocchi, whose address is 5 Piazza Grazioli, Rome. Communications announcing papers to be read should not be received later than April 30, 1911. Dr. James C. White, of Boston, with Dr. Jonathan Hutchinson, of London, and Dr. Edmund Lesser, of Berlin, are the honorary presidents, while Dr. A. Ravogli, of Cincinnati, Ohio, is the American secretary. The themes before the association are: 1, What influence did the new ætiological, diagnostic, and experimental researches exercise on the direction of the therapy of syphilis and on the possibility of immunization or of a radical or abortive treatment of the infection; 2, Results of physicotherapy in the treatment of disease of the skin; 3, Blastomycosis, sporotrichosis, and relation to analogue processes.

The Health of Chicago.—During the week ending October 29, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 57 cases, 3 deaths; measles, 23 cases, 0 deaths; whooping cough, 25 cases, 3 deaths; scarlet fever, 87 cases, 3 deaths; diphtheria, 204 cases, 22 deaths; chickenpox, 41 cases, 0 deaths; tuberculosis, 102 cases, 63 deaths; pneumonia, 8 cases, 57 deaths; cerebrospinal fever, 1 case, 0 deaths. There were 30 cases of contagious diseases of minor importance reported, making the total number of cases reported 578, as compared with 681 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 57, and there were 20 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 147, of whom 100 were under one year of age. The total deaths from all causes, exclusive of stillbirths numbered 517, corresponding to an annual death rate of 12.3 in a thousand of population, as compared with a rate of 13.5 for the preceding week and 14.2 for the corresponding period last year.

The Health of Philadelphia.—During the week ending October 22, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 31 cases, 7 deaths; scarlet fever, 26 cases, 0 deaths; chickenpox, 22 cases, 0 deaths; diphtheria, 86 cases, 7 deaths; measles, 31 cases, 0 deaths; whooping cough, 45 cases, 6 deaths; pulmonary tuberculosis, 84 cases, 64 deaths; pneumonia, 28 cases, 14 deaths; erysipelas, 3 cases, 0 deaths; mumps, 5 cases, 0 deaths; infantile paralysis, 12 cases, 1 death; trachoma, 2 cases, 0 deaths. There were 7 deaths from tuberculosis other than that of the lungs, and 35 from diarrhœal diseases under two years of age. There were 38 stillbirths; 24 males and 14 females. The deaths from all causes exclusive of stillbirths, numbered 412, in an estimated population of 1,598,400, corresponding to an annual death rate of 13.40 in a thousand of population.

Society Meetings for the Coming Week:

MONDAY, *November 14th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Williamsburgh Medical Society, Brooklyn, N. Y.; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *November 15th.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Tri-Professional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association.

WEDNESDAY, *November 16th.*—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

THURSDAY, *November 17th.*—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society (annual); Æsculapian Club of Buffalo, N. Y.

FRIDAY, *November 18th.*—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; New York Microscopical Society; Brooklyn Medical Society.

Gifts and Bequests to Charity.—The will of Mrs. Auguste Vogel, who died recently in Milwaukee, contains the following bequests: The Evangelical Lutheran Home for the Feeble Minded, Watertown, $5,000; Lutheran Altenheim Society, $2,000; Milwaukee Protestant Home for the Aged, $2,000; Northwestern University, Watertown; Milwaukee Protestant Orphan Asylum and the Children's Free Hospital, $500 each.

By the will of the late Dr. De Forest Willard, of Philadelphia, the Aid Society of the Philadelphia Medical Society receives $500 in trust for the relief of members of the society and their families. To the trustees of the University of Pennsylvania is left $300 in trust for a free bed in the children's orthopædic department of the hospital, to be known as the Elizabeth Porter Willard Bed.

Miss Newell, of Kenosha, Wis., has made a gift of $10,000 to the Kenosha Hospital Association, to endow a room in the institution, as a memorial to her father and mother.

By the will of Lambert Tree, the George Washington University, Washington, D. C., will receive $10,000 and the University of Virginia, $5,000. St. Luke's Hospital, Chicago, becomes a residuary legatee.

The board of trustees of Hahnemann Hospital, Philadelphia, has just received a legacy of $100,000 from the late William L. Elkins. The entire sum will be used for the erection and maintenance of an addition to the hospital to be known as the Elkins Memorial Dispensary.

Mrs. Russell Sage has made a gift of $500 to St. Joseph's Hospital, at Far Rockaway, which is to be added to the building fund of the hospital.

The gift of $1,000 to the Frederick Douglass Memorial Hospital, Philadelphia, by Mr. Henry Phipps, has been announced by the superintendent of the institution.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 3, 1910.

1. The Ætiology of Cholecystic Gallstones, By W. Irving Clark.
2. A Fallacy of Psychotherapy. "Fighting It Out" in Functional Nervous Disorders, By John E. Donley.
3. Spontaneous Dislocation of the Hip Joint Following Acute Infectious Diseases, By Charles Greene Cumston.
4. The Technique of Arthrotomy. A Report upon and Discussion of One Hundred and Ninety-eight Cases, By Charles F. Painter and Andrew P. Cornwall.

1. **Ætiology of Cholecystic Gallstones.**—Clark says that hypotheses and the experimental evidence agree upon stagnation of bile as the most important predisposing factor to gallstone formation. But in a large number of cases no preceding condition can be found except typhoid fever or chronic indigestion. So frequent is a history of indigestion with occasional pain obtainable in definite gallstone cases that it is quite possible that this is an ætiological factor. Since the contraction of the gallbladder is governed by a reflex established in the duodenum by the acid chyme, it is easily conceivable that a chronic catarrh of the stomach and duodenum might produce a reflex congestion of the mucous membrane of the gallbladder. As in a majority of cases of gallstone disease confined to the gallbladder, a sharp line of demarcation of the inflammation is observed at the opening of the cystic duct, it is probable that it is at this point, and not in the duct, that the obstruction occurs, through congestion and subsequent swelling of the mucous membrane. Such a congestion would not be caused by bacteria, but would afford a fertile field for bacterial infection through the bile. Apparently, there have been no experimental or autopsy findings to prove or disprove this theory. The next stage is that of beginning stone formation. In this stage the walls of the gallbladder probably remain as in the pregallstone stage. The contents, however, show a most interesting change. Detritus is much more evident in the bile. This consists of broken down epithelial cells, held together by mucous, amorphous cholesterin. The crystals have a tendency to unite, and gradually a small cholesterin stone forms, which grows. Whether bacteria are present at the early stage of stone formation is another point upon which there is dispute; thus the upholders of the chemical hypothesis say that bacteria need not necessarily be present, but do undoubtedly accelerate the rapidity with which the stones form. The upholders of the mucous membrane hypothesis, on the other hand, assert that bacteria are absolutely necessary, and in experimental work no gallstones have been produced except in the presence of bacteria. It is necessary to conceive, therefore, that bacteria absorbed from the intestine are excreted in the bile, and that they lodge in the congested mucous membrane of the gallbladder. Here they establish a catarrh with an enormous increase in the mucous glands; with this there is an increase of mucus tending to cause a precipitation of calcium and a change of reaction of the bile, and increased necrosis and desquamation of epithelial cells, resulting in cholesterin formation. The next stage is the stage of development of gallstones. All the classical conditions for cholelithiasis are now present. The gallbladder, enlarged and relaxed, presents a chronic catarrhal inflammation of the mucous membrane, with atony and thinning of the muscular coat. It is filled with stagnant bile supersaturated with cholesterin and calcium. One or more stones in varying stages of formation may be seen. These stones are soft and readily take impressions from their neighbors and from the contractions of the gallbladder. The contraction occurs from time to time normally, as an effect of the inflammatory condition, or in an effort to expel the foreign bodies. A gradual increase in size and number of the stones takes place during this stage, and their presence accentuates the catarrhal condition of the mucous membrane. At any time the inflammation may become acute, due to a blocking of the already partially obliterated opening into the cystic duct, or to an increase in virulence of the bacteria. Such exacerbations are more frequently the cause of pain than the passage of a stone into the cystic duct. In fact, most recent authors believe the pain of cholecystic gallstones is due to acute infection rather than mechanical passage of stones. An obstruction, interfering completely with the outflow of bile and consequent drainage of the gallbladder, however, may be due to a stone which acts like a ball valve in the neck. In this condition there results a typical attack of colic lasting until the stone drops back into the bladder and drainage is again established. Thus at any time, the simple catarrh may change into an acute infectious cholecystitis with the resulting pathological changes.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 5, 1910.

1. The Prophylaxis of Cancer, Charles H. Mayo.
2. Ætiology of Cancer of the Skin, By Leo Loeb.
3. Treatment of Malignant Growth of the Skin from a Dermatological Standpoint, By William Allen Pusey.
4. Surgical Treatment of Cutaneous Malignant Growths, By Joseph C. Bloodgood.
5. Pathology of Malignant Diseases of Nonepithelial Formation, By F. B. Mallory.
6. The Pathology of Malignant Epithelial Growths of the Skin, By John A. Fordyce.
7. Preliminary Report on the Clinical Significance of Indicanuria, By G. Baar.
8. The Comparative Efficiency of Some Common Germicides, By Wilbur E. Post and Homer K. Nicoll.
9. The Principles of Hydrotherapy, By Thomas McCrae.
10. Teaching the Student the Operation of Paracentesis of the Drum Head, By Harry Friedenwald.
11. Tetanus Successfully Treated with Large Quantities of Antitoxine, By A. J. Caffrey.
12. The Muffled Room in Treatment of Acute Insanity, By Sanger Brown.

2, 3, 4, 5, 6. **Skin Cancer.**—These papers were read at the Section in Dermatology at the annual meeting of the American Medical Association, held at St. Louis in 1910. Loeb speaks of the ætiology, and says that we must recognize the importance of external factors and the presence of internal factors, either of which may predominate. The external causes are light rays, Röntgen says, chemical factors, soot, mechanical irritation, etc. In regard to the internal conditions our knowledge is less definite: Developmental abnormities, hereditary, internal production of a substance which sensitizes the skin to the action of light, embryonic conditions. ——Pusey speaks of the treatment, and mentions internal remedies, such as arsenic, excision, caustics, arsenous acid, zinc chloride, caustic potash, acid nitrate of mercury; Röntgen ray.——Bloodgood takes up the surgical treatment.——Pathology is the subject of Mallory's and Fordyce's remarks. Fordyce concludes that a study of skin cancers suggests to the observer, if it does not demonstrate absolutely, that no one agent is concerned in the malignant proliferation of epithelial tumors and that cutaneous carcinomata have a multiple ætiology. The development of epitheliomata following exposure to sunlight, x rays, or other radiant energy is a strong argument against the parasitic nature of the disease. Likewise, the occurrence of epitheliomata in xeroderma pigmentosum and allied conditions of the skin which come on in old age or middle life is an additional argument against this theory. These conditions are preceded by changes identical with those met with in xeroderma pigmentosum, such as a dry atrophic skin, telangiectases, warty growths, and, finally, malignant transformation. Furthermore, the action of chemical substances on epithelium, for which they have a special predilection, such as arsenic, tar, scarlet red, tobacco, etc., demonstrate that a variety of agents have the power to stimulate epithelial mitoses which may pass into malignancy. Cancers which develop on scar tissue or antecedent conditions of the skin like lupus, syphilis, etc., suggest that we are dealing with misplaced cells in some cases and in others with degenerative processes which lead to the abolition of the functional activity of the cells, which is followed, as a consequence, by vegetative activity, according to the theory of Oertel, Adami, and others. In primary multiple epitheliomata we have several foci in which an infectious agent or some internal sensitizing agent may have acted on the cells and rendered them susceptible to a local factor.

8. **Common Germicide.**—Post and Nicoll summarize their results from experimentations and observations as follows: The reliability of the prompt action of a few simple germicides such as tincture of green soap, alcohol in solutions above fifty per cent., silver nitrate solutions as dilute as 1 to 1,000, the iodine solutions either as the tincture or in aqueous solutions with potassium iodide, phenol in five per cent. solution. The unreliability of many agents prevalently supposed to be effective germicides. The slow action of solutions of mercuric chloride, although when given hours to act it is effective in high dilution. The economic importance in the choice of germicides. This is of special interest to the managers of hospitals, since there is great difference in expense between furnishing the much advertised, high priced (yet less effective) articles in concentrated solutions, and the simple, cheaper (yet more efficient) articles in higher dilutions. In one hospital alone, where advantage has been taken of this difference the saving has been several hundreds of dollars a year, and efficiency has been increased at the same time.

MEDICAL RECORD.

November 5, 1910.

1. The Ehrlich-Hata (606) Preparation. (Therapia Sterilisans Magna.) A Review of Some of the Reports Made by German and French Physicians upon the Treatment of Syphilis by This Preparation, By John Bethune Stein.
2. Custodianship of the Watch and Bible of Dr. Benjamin Rush, with Biographical Notes, By Robert Abbe.
3. Complete Subparietal Rupture of the Kidney, with Report of a Case, By Henry G. Bugbee.
4. The Nonentity of Acute Dilatation of the Stomach, By George Edward Barnes.
5. Report of Two Cases of Tetanus Following Vaccination, By Clive D. Scott.
6. Asthma and the Lung Reflexes of Abrams, By Albert Abrams.

1. **Ehrlich's 606.**—Stein reviews some of the reports made in German and French literature on dioxydiamidoarsenobenzol.

3. **Complete Subparietal Rupture of the Kidney.**—Bugbee remarks that in complete subparietal rupture of the kidney the patient will, as a rule, give a history of having received a severe blow in the side. The examination reveals a tumor in the loin. There is, as a rule, hæmaturia. The patient is in a state of profound shock. These symptoms with evidences of internal hæmorrhage should lead one to treat the patient for rupture of the kidney. Prognosis depends upon the delay in applying the proper treatment. The primary mortality is due to hæmorrhage, while secondary deaths are caused by infection, which may be hæmatogenous or ascending in origin. The mortality of all cases of subparietal ruptures of the kidney has been estimated at from thirty-two to ninety-two per cent. Treatment resolves itself into expectant and radical. Expectant treatment should be employed only as a temporary procedure, to allow the patient to recover from the primary shock. The patient should be watched very closely, and this line of treatment must be immediately superseded by operation if the hæmorrhage is progressive, or where there is reason to believe that there exists a rupture of the peritonæum with intraperitoneal complications. Expectant treatment consists in rest, application of cold and pressure to control the hæmorrhage, treatment of the shock, with a refilling of the depleted vascular system. Operation is indicated in the vast majority of cases, and should be immediate. The choice of the operation depends upon the presence or absence of complications. When intraperitoneal organs are injured the abdomen should be opened anteriorly along the linea semilunaris. In uncomplicated cases the posterior incision, along the outer border of the erectorspinæ, and quadratus lumborum muscles, or the oblique incision parallel to the free border of the ribs is preferable. The steps of the operative procedure should lead to the checking of the hæmorrhage, removal of the kidney if necessary, and drainage of the wound. Associated lesions, when found, must be treated. Manipulation should be reduced to a minimum, and the operation should be performed as rapidly as possible. He reports a case, in which the patient left the hospital cured six weeks after the accident.

6. **Asthma and the Lung Reflexes of Abrams.**—Abrams observes that Aufrecht has shown that the musculature of the finer bronchi consists of a stout

layer of circular and a weaker layer of longitudinal fibres. The clinical observations of Abrams, in 1896, which were subsequently confirmed by the physiological investigations of Dixon and Brodie in 1903, demonstrate that the vagus contains fibres which can either dilate or constrict the bronchi. Both lung reflexes are mediated by vagal action; the lung reflex of dilatation by the bronchodilator, and the lung reflex of contraction by the bronchoconstrictor fibres in the vagus. Our author then takes up the tests, and says that as is well known to physiologists, atropine paralyzes the motor endings of the vagus. An injection of 1/60 grain will manifest its action within thirty minutes after the hypodermic injection and disappears in from one to three hours. This action has already been utilized in the diagnosis of bradycardia. It will be noted that after the atropine injection, both lung reflexes are absolutely abolished. It is well known that small doses of pilocarpine are almost exactly antagonistic in their action to atropine, and this applies in all cogency to their action on the vagus. After a hypodermic injection of pilocarpine (1/10 grain), one may note an exaggeration of both lung reflexes. Thus, before the injection of pilocarpine, the lower lung border posteriorly could be made to descend (lung reflex of dilatation) 4 cm. after cutaneous irritation, whereas after the injection the border in question descended 7 cm. The lung reflex of contraction before the injection lasted twenty seconds, whereas after the injection it lasted fully one minute. After a hypodermic injection of 8 minims of a 1 in 1,000 adrenalin chloride solution, the following phenomenon was observed: After cutaneous irritation the lower lung border, instead of descending as in the norm (lung reflex of dilatation), receded from 2 to 4 cm. In other words, cutaneous irritation elicited the lung reflex of contraction in lieu of the counter reflex of dilatation. If one accepts the prevailing opinion that asthma consists essentially of a spasmodic constriction of the bronchioles, then an appropriate dose of atropine which paralyzes the bronchial musculature through its action on the motor endings of the vagus must invariably inhibit an asthmatic paroxysm. Here, the action of atropine, as some assume, is not caused by a dilatation of the bronchi, because the action of the drug is to paralyze the dilator as well as the constrictor fibres of the bronchial musculature. Atropine in sufficiently large doses is one of the most satisfactory drugs in asthma and, aside from its action in inhibiting bronchospasm, it diminishes secretion, reduces the sensitiveness of the mucous membranes to reflexes, and stimulates the respiratory centre. As a matter of fact, all asthmatic paroxysms do not yield to atropine, hence one is constrained to conclude that bronchospasm is not the invariable concomitant of asthma. There may be a hyperæmia of the bronchial mucosa analogous to urticaria, a swelling of the same mucosa, or even exudative bronchiolitis. Determining the tonus of the lung reflex of contraction is an important test in distinctive diagnosis. In asthma, due to a defective bronchial musculature, the lung reflex of contraction cannot be elicited. A supposed spasmodic factor in the pathology of pulmonary diseases must yield to atropine and in this sense atropine is of diagnostico-therapeutic value. Adrenalin chloride (in doses from 8 to 15 minims hypodermically of the 1 in 1,000 solution) is one of the most efficient agents in inhibiting an attack of asthma and may be regarded as a specific in arresting paroxysms of asthma. As noted in the investigations of the writer, adrenalin chloride evokes the lung reflex of contraction which permits the longitudinal fibres of the bronchial musculature to expel the residual air imprisoned by the spasm of the circular fibres. It is, furthermore, evident that, in our employment of drugs in the treatment of asthma, it is irrational to combine atropine and adrenalin in the same prescription.

BRITISH MEDICAL JOURNAL.

October 22, 1910.

1. An Address on Scientific Observation, By H. A. Miers.
2. An Address on Certain Intracranial Diseases Associated with Nasal, Aural, and Laryngeal Symptoms, By Purves Stewart.
3. Injuries to the Eye, By Archibald Stanley Percival.

Seventy-eighth Annual Meeting of the British Medical Association.

Section in Gynæcology and Obstetrics.

4. Discussion on the Causes and Treatment of Dysmenorrhœa, Introduced by G. Ernest Herman.
5. The Structure of the Stroma of the Endometrium, and Its Bearing on the Menstrual Changes, By James Young.
6. Discussion on Treatment of Fibroids Complicating Pregnancy, Introduced by Walter W. H. Tate.
7. The Origin and Prevention of Puerperal Fever, By Professor Döderlein.
8. Additional Cases of Rupture of the Uterus, By J. M. Munro Kerr.
9. Air Embolism during Labor, By John Campbell.
10. Intraperitoneal Hæmorrhage in Cases of Uterine Myomata, By Arthur J. Wallace.
11. Localized Necrosis of an Adenomyomatous Right Tube, with a Left Tubal Mole and Fibroid Uterus, By Frances Ivens.
12. Cases of Intestinal Obstruction Due to the Uterus, By Professor Sigismund Gottschalk.
13. The Causal Treatment of Dystocia in Cases of Pelvic Contraction, By Ott von Herff.
14. Fibroid Tumors of the Uterus as a Complication of Pregnancy, By Cuthbert Lockyer.
15. Papillary Ovarian Cysts: Should Both Ovaries be Removed? By Professor W. Nagel.
16. Involution of the Uterus, By C. Nepean Longridge.
17. The Surgical Treatment of Fibrosis of the Uterus, By A. Louise McIlroy.

Section in Psychological Medicine and Neurology.

18. Discussion on Insanity and Marriage, Introduced by G. H. Savage.
19. Paranoidal Symptoms at the Female Climacteric, By Leonard D. Baugh.
20. The Vestibular Apparatus and the Cerebellum, By Barany.
21. On the Teaching of Psychiatry, By D. G. Thomson.
22. Discussion on the Treatment of Tabes Dorsalis, Introduced by J. S. Risien Russell.
23. On the Psychological Treatment of Certain Functional Conditions, By Edwin Ash.
24. The Kneejerk and Simple Reflexes, By W. A. Jolly.

4. **Dysmenorrhœa.**—Herman said that the distinction between menstrual pain and dysmenorrhœa was important. Pain from anæmia, neuralgia, tuberculosis, pelvic inflammation, adenomatous growth, etc., might accompany menstruation, but these conditions were not dysmenorrhœa. Healthy women often passed membranes without pain. There were cases in which menstrual pain was so severe as to prevent young women from earning their living, and to make older women chronic invalids. Such cases could be cured by removing the

ovaries. They also probably could be cured by hysterectomy. He had had no personal experience of the effects of hysterectomy for dysmenorrhœa; but he knew that oophorectomy would cure it. It had been said that atrophy of the ovaries followed hysterectomy. As to this question, he had not been able to satisfy himself. There were cases in which it was necessary to stop menstruation; but there was room for difference of opinion as to the best way of doing this. Anteflexion he regarded as the natural shape of the uterus in most virgins; it would, therefore, be surprising if it were not found in cases of dysmenorrhœa. Electricity, applied two or three times a week for three months, seemed to him a less simple treatment than dilatation, even if the dilatation had to be repeated. Intermediate pain he thought probably due to ovulation; but this, so far as he knew, was conjecture, he knew no proof. Stem pessaries were happily now little used, but in the past they had often caused fatal peritonitis.——In the discussion that followed, Bell, of Liverpool, said that if we stated that there existed only one form of dysmenorrhœa, we would admit that dysmenorrhœa was a disease, whereas it was a symptom of many conditions. He classified dysmenorrhœa into two large groups: 1. Disorders of the normal physiological conditions; *a,* exfoliation of the endometrium (membranous dysmenorrhœa); *b,* atony of uterine muscle, with the formation of clots *in utero; c,* deficient contractility of the uterine muscle, due to bad development of the uterus, or to contortions, such as acute anteflexion. In these uteri there was a ring of noncontractile tissue. 2. Acquired pathological conditions, such as salpingitis and fibromyomata. He considered that obstruction did occur, especially when the uterus was distended by clots or a membrane; in these circumstances, the pains were laborlike in character and lasted until the cervix had dilated sufficiently to allow of the escape of the uterine contents. If the cervix was very small, it should always be split anteriorly or posteriorly. The question of successful treatment was chiefly dependent on the recognition of the causal factors and their scientific treatment. He was strongly opposed to the removal of the ovaries, which was often followed by disastrous results to the mental stability of the patient; nor ought the uterus to be removed. Morphine and alcohol should never be given, lest a habit be established. Further work on the ductless glands—which so largely influenced the menstrual function and development of the genital organs—would lead to important advances in the treatment and prevention of dysmenorrhœa.

5. **Stroma of the Endometrium.**—Young remarks that the stroma of the endometrium consists of a soft, semifluid, protoplasmic mass imperfectly differentiated into cellular elements. The cells anastomose freely with one another by means of protoplasmic processes. They present many and varying alterations in shape, but these are easily dispelled, and the cells then approximate to the typical stellate shape. The differentiation of the stroma cells is, thus, probably more apparent than real. The intercellular spaces, in all probability, do not communicate directly with one another. The anastomosing processes are not, as is usually stated, filaments, but films of protoplasm, which under ordinary circumstances close in the fluid cavities. The intima and media of the vessels are nothing more than ordinary flattened stroma cells. This shape they easily lose. Except in the deepest layers of the mucosa the vessels have no specialized supporting coats (muscle, elastic tissue). The vessels are obviously so constructed as to allow a ready and universal opening up of their walls, and the structure and consistence of the stroma such as to permit its ready displacement by fluid or blood. The œdematous infiltration of the tissues, which precedes the hæmorrhagic escape, is due neither to a mechanical displacement or filtration of fluid from the vessels, nor to a secretory activity of the intimal cells. It is dependent on protoplasmic changes, which result in an active imbibition of fluid from the vessels, by a process of osmosis. So far as we at present know, this change is due to a widespread liberation of crystalloidal elements in the tissues. The infiltration of the stroma with blood corpuscles is, in all probability, due to exactly the same cause. In consequence of its peculiar structure, the uterine mucosa must be looked upon, throughout its entire extent, as a potential blood sponge.

17. **Surgical Treatment of Fibrosis of the Uterus.**—McIlroy observes that the surgical treatment of fibrosis of the uterus resolves itself into two divisions—namely, removal of both sets of appendages in order to get rid of the hæmorrhage, or the extirpation of the uterus along with or without one or both ovaries. In the first division it is true that in the majority of cases the hæmorrhage is stopped, but the patient may still complain of pelvic pain, leucorrhœal discharge, and general discomfort. By the operation of hysterectomy the pathological tissue is altogether removed, and if the patient is a young woman one or both ovaries may be left, thus obviating the discomfort of an artificial menopause.

22. **Tabes Dorsalis.**—Russell is in favor of mercurial inunction treatment of tabes dorsalis, as he believes in the syphilitic origin of tabes.

LANCET.

October 22, 1910.

1. Some Aspects of Heredity in Relation to Mind, By H. B. Donkin.
2. The Royal Navy Medical Service, By Admiral Sir John Durnford.
3. Further Experiences with "606" (80 Cases), By J. E. R. McDonagh.
4. A Case of Benign Cyst of the Humerus, By Hugh Lett and H. M. Turnbull.
5. Anaphylaxia in Hay Fever, Nettle Rash, and Asthma, By G. Billard.
6. Three Cases of Thrombosis of the Lateral Sinus, By J. Walker Wood.
7. The Treatment of Cholera Asiatica with an Antiendotoxic Serum, By R. Tanner Hewlett.
8. The Action of Chlorine upon Water Containing the Cholera Vibrio, By H. W. Harding.

3. **Ehrlich's 606.**—McDonagh is able to report on eighty cases treated with dioxydiamidoarsenobenzol, the treatment being very successful. So far two cases have recurred; both patients had extensive ulceration of the nose besides gummata elsewhere; both were injected on August 3rd with 0.4 gramme and on September 10th both patients noticed a redness on one side of the nose, which in a

few days became ulcerated. They both on September 24th received a second injection of 0.5 gramme. It is probable that in both these patients the initial dose was too small. It will probably take years before we shall be able to regulate the dose on a sound basis. Should that be the case and even recurrences occur, the patient's health is so much benefited by the initial dose that he would be in a better condition to be treated with mercury if necessary. Fortunately, secondary symptoms did not develop in a single case in which the chancre was the only one when the injection was made, and animal experiments also go to prove that a single injection is capable of producing an absolute cure, since Neisser was able to reinoculate apes a second time with syphilis. A second attack in man is regarded by many as impossible, probably due to the inefficiency of mercury in producing a cure; therefore we shall no doubt see several such cases which have been previously treated with 606. He concludes that much is yet to be learned before the final word on this wonderful remedy is given; one can say that the dangers have been extremely exaggerated, since only twelve deaths have occurred in 12,000 cases, and in many of these the injection was given as a last resource. This being the case, and there not having occurred an instance of visual disturbance, the drug will not, in his opinion, fail to achieve the object which its talented discoverer, Professor Ehrlich, had hoped for it.

5. **Anaphylaxia in Hay Fever.**—Billard observes that he believes that neuroarthritics, and especially asthmatics and those predisposed to hay fever, are victims to anaphylaxia, either acquired or hereditary. He has adopted the hypothesis of Whitehill Hinkel, of Buffalo, who recognizes three conditions essential to the production of hay fever: 1. A nervous temperament, hereditary or acquired; 2, a sensitiveness, or a peculiar morbid excitability of the mucous membrane, or a nasal complaint; and, 3, an external irritant. He extends these three conditions to hay asthma and to ordinary asthma. After very close observation of his patients he comes to this conclusion, that the majority of subjects attacked by hay fever or asthma are persons hereditarily anaphylactic, or have during their life acquired anaphylaxia. As a result of Professor Richet's remarkable discovery, that certain poisons injected in animals are capable of altering the organisms of the latter to such an extent that they become more and more sensitive to these poisons, it would appear that a whole series of inexplicable disorders find an easy explanation if anaphylaxia is taken into consideration. In a recent clinical lecture Professor Hutinel says that "acetonæmic vomiting may be considered a sort of digestive asthma. The bilious headache represents, on the other hand, a kind of nervous asthma; eczema, a cutaneous asthma; and gout, an asthma of the joints. The common ground of arthritis brings these diverse complaints into close connection. Thus it is common to find amongst the ancestors of asthmatic persons nervous troubles, gout, diabetes, obesity." In our author's opinion, al these manifestations depend on anaphylaxia. A manifestation of anaphylaxia which in his eyes ranks permanently among the neuroarthritics is nettlerash, which is frequently observed in the course of anaphylactic accidents such as poisoning by shellfish, by certain fruits such as strawberries, and certain medical products such as antipyrin. He concludes that everybody is aware to-day that in hereditary neuroarthritis different conditions are transmitted which constitute varying manifestations of neuroarthritis. It is known that a corpulent person will have a gouty son; that this gouty son may have an asthmatic or diabetic son, or one subject to gravel, etc.

7. **Treatment of Cholera Asiatica with Antiendotoxic Serum.**—Hewlett has treated nine cholera patients with antiendotoxic serum, four died, five recovered. The number is too small to base any conclusion on the value of the serum. He gives the history of this antiendotoxic serum. He says: The late Dr. Allan Macfadyen found that by the trituration of cholera cultures in the presence of liquid air the intracellular cholera juice or "cholera endotoxine" possessed decided toxic properties and by the immunization of animals an antiendotoxic serum was obtained which possessed considerable protective power as well as agglutinative and bacteriolytic properties. He has immunized a horse by the Macfadyen method with cholera endotoxine prepared by the trituration of virulent cholera cultures obtained through Dr. Haffkine from India. This antiendotoxic serum experimentally possessed considerable protective and curative powers tested on guineapigs. Thus 0.0001 c.c. and 0.5 c.c. of serum protected against ten and fifty lethal roses respectively of living cholera culture injected simultaneously intraperitoneally into guineapigs. Curatively 1 c.c. of the serum saved the life of a guineapig inoculated intraperitoneally with four lethal doses of living cholera culture six and a half hours previously. A trial of this serum was made in St. Petersburg on nine cases of cholera which occurred during the epidemic of last year in Russia.

MEDIZINISCHE KLINIK.

October 16, 1910.

1. Subcutaneous Injuries of the Abdomen, By Oscar Foederl.
2. Radium and Metabolism, By F. Gudzent.
3. The Use of the Spectral Light in the Examination of the Eye, By Helmbold.
4. A New Symptom of Acute Otitis Media, By Sanford Blum.
5. Two Cases of Swallowed Teeth, By Dreesmann.
6. Contribution to the Treatment of Syphilis with 606, By O. Salomon.
7. The Action of 606 on the Syphilitic Process, By E. Meirowsky.
8. Ferrous Sajodin in Ophthalmology, By Paul Cohn.
9. A Case of Syphilitic Fever, By S. Gottschalk.
10. Physical Treatment of Bronchial Asthma, By E. Kuhn.
11. An Artificially Produced Premature Birth, By Steinhauer.
12. Somnambulism and Epileptic Equivalent, By Friedrich Kanngiesser.
13. Catheter Cream and Cystoscope Cream, By Ernst R. W. Frank.
14. A New Urine Reaction and Its Connection with Ehrlich's Diazoreaction, By Moritz Weiss.

2. **Radium and Metabolism.**—Gudzent states that in thirteen out of fourteen cases of gout treated with emanations of radium the uric acid disappeared from the blood. This he ascribes to a correction of the metabolism in the persons affected.

3. **The Use of Spectral Light in the Examination of the Eye.**—Helmbold suggests the use of the successive bands of spectral light from red to violet instead of ordinary light in making an ophthalmoscopic examination in order to make visible peculiarities that are invisible when ordinary light is employed.

6 and 7. **606.**—Salomon reports several cases treated by him with the same results that have been commonly reported. He dealt with cases of primary disease, cases in which the patients had shown an idiosyncrasy against mercury, or a marked resistance to the drug, and malignant cases. The dose used in all was 0.6 gramme. The injections were subcutaneous below the scapula near the vertebral column in the first fifteen cases, but in four large abscesses formed, filled with sterile pus.——Meirowsky's observations likewise agree with the observations of other writers that the specific effect of this preparation upon the symptoms of syphilis is not only quicker and prompter than that of mercury, but that many cases respond to it that do not respond to mercury and iodine. He discusses briefly the question whether in the future this method of treatment will supplant our old methods of treatment or not, and inclines to the opinion that a combination of the remedies will be used.

8. **Ferrous Sajodin.**—Cohn describes *Eisensajodin* as a preparation of iron and iodine containing 5.6 per cent. of iron and 24.5 per cent. of iodine held together with a fatty acid and dispensed in the form of chocolate tablets. He has used it in fifteen cases of eye disease in children, all but one scrofulous, with excellent results, and recommends it as a well borne, pleasantly tasting preparation for scrofulous children.

9. **A Case of Syphilitic Fever.**—Gottschalk reports a case of tertiary syphilis without secondary symptoms. Fourteen days after the coitus a hard chancre appeared with an eruption of vesicles on the limb; from six to eight weeks later a tertiary syphilid, ostitis gummosa, appeared on the ninth dorsal vertebra associated with a high fever and a serious feeling of illness. The symptoms disappeared under treatment with mercury and iodide.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 11, 1910.

1. The Importance of the Disturbances in the Assimilation of Lime in the Origin of Rickets, By DIBBELT.
2. Lacerations of the Tentorium in Labor, together with the Importance of the Dural Tension in Chronic Diseases of the Brain, By BENEKE.
3. Mechanics of the Escape of the Infant Skull and Protection of the Perinæum, By GRUBE.
4. Technique of the Meiostagmin Reaction in Malignant Tumors, By ASCOLI and IZAR.
5. Wassermann's Reaction in the Tropics, By BAERMANN and WETTER.
6. Further Experiences with the Modified Wassermann Reaction According to von Dungern-Hirschfeld, By KEPINOW.
7. Results of Treatment of Gynæcological Nervous Disturbances, By ENGELHORN.
8. Treatment of Gonorrhœal Epididymitis by Puncture, By FRUEHWALD.
9. Contribution to the Study of the Behavior of Ehrlich-Hata's Preparation in Rabbits, By SCHWARTZ and FLEMING.
10. Ehrlich's 606 in Lepra, By EHLERS.
11. A Nonirritant Wound Drainage, By FESSLER.
12. Centennial Celebration of the Medical Faculty of Berlin, By SUDHOFF.
13. Medical Report of the Journey to Greece by the Teachers and Students of the Bavarian Schools, By BERNHUBER.
14. The Quackery Bill, By GRAACK.

2. **Lacerations of the Tentorium during Labor.**—Beneke says that sudden lateral compressions of the head during labor very frequently cause lacerations of the tentorium which may result in immediate death, protracted asphyxia, or other more or less severe brain symptoms; chronic hypertensions from habitual lateral decubitus cause very probably inhibitions of the circulation in the longitudinal sinus with their consequences, such as hydrocephalus internus and hypertrophy of the brain, both of which in turn form the basis of manifold pathological symptoms in the functional expressions of the brain.

3. **Protection of the Perinæum.**—Grube thinks the principal factors in the protection of the perinæum to be the keeping of the patient in the dorsal position and the flexion of the head of the child forward by means of the fingers of the accoucheur so that the diameter through the nape and the brow presents for passage through the vulva. To do this the forehead of the child is pressed back by the right hand of the obstetrician, with the thumb pressed on the perinæum, while with his left forefinger, or fore and middle fingers, introduced in the angle of the symphisis he draws the occiput forward until the nape of the neck is in the angle of the symphisis.

8. **Treatment of Gonorrhœal Epididymitis by Puncture.**—Fruehwald states that a single puncture cannot exert a lasting influence on the course of an epididymitis, and that multiple punctures are generally contraindicated because it is not desirable to repeatedly injure so important an organ as the epididymis.

10. **606 in Lepra.**—Ehlers publishes a letter from a former student of his in which is mentioned a granular degeneration of the lepra bacilla in seven patients treated with injections of 606.

WIENER KLINISCHE WOCHENSCHRIFT.

October 13, 1910.

1. Fibrosclerotic Paranephritis, By O. ZUCKERKANDL.
2. The Excretion of Sugar after Partial Extirpation of the Pancreas, By FELIX REACH.
3. Oxydases and Peroxydases, By C. KREIBICH.
4. The Surgery of the Gall Passages, By DOBERER.
5. Circumscribed Myxœdema in a Cretin, By ARNOLD LAUFER.

1. **Fibrosclerotic Paranephritis.**—Zuckerkandl says that while this disease is mentioned in the books there is no clinical description of the symptoms and the principles on which its treatment is based are not mentioned; this is wrong because the induration about the kidney must give direction to our therapeutic efforts, which differ materially from the type of treatment of other renal diseases. Clinically we find when the induration about the kidney has reached a certain degree a hard, smooth walled tumor, very slightly or not at all movable, in the lateral wall of the abdomen. There is no ballottment and only the fact that the tumor is situated in the flank suggests the kidney as the starting point, a suggestion confirmed by the abundant presence of thick, green pus in the urine. The pyuria

is frequently intermittent, because the pelvis of the kidney and the ureter are always surrounded by indurations that interrupt temporarily, in advanced cases constantly the free passage of the pus from the kidney to the bladder. If the second kidney remains normal the urine may be unchanged, but this is exceptional, as a rule the urine contains so much pus that from its quantity alone a pathological cavity in the kidney may be diagnosticated. The great quantity of pus in the urine is the one symptom of the far advanced destruction of the kidney. The cystoscopic picture shows commonly changes of the mouth of the ureter that are to be ascribed to the shortening, contraction, and narrowing of the ureter. A slow stream of thick pus flows continuously from the mouth of the ureter, with no sign of contraction in advanced cases. Under such circumstances the conclusion is justified that the function of the affected kidney is destroyed, that the kidney has been transformed into a system of abscesses, and that it has become enclosed in induration together with the pelvis and ureter. The general symptoms are those of renal pus stasis. Although the aspect of the disease is sufficiently characteristic yet it is frequently not recognized, but mistaken for diseases of the liver and biliary passages or one of the infectious diseases, for the tumor in the abdomen does not have the ordinary characteristics of a swelling of the kidney and when it is on the left side may be taken for an enlarged spleen. Within the induration lies the kidney; often it is very small, in other cases it is of normal size, rarely it is enlarged, but in all cases it is completely destroyed, partly by suppuration, partly by atrophy. If only one kidney is affected its total extirpation is the only rational means of treatment.

2. **Excretion of Sugar after Partial Extirpation of the Pancreas.**—Reach concludes that raw meat, but not cooked meat, contains a poison which induces an excretion of sugar.

ZENTRALBLATT FÜR GYNÄKOLOGIE.

September 17, 1910.

1. Actinomycotic Parametritis, By O. Bondy.
2. The Technique of Peritoneal Drainage, By J. Fabricius.

1. **Actinomycotic Parametritis.**—Bondy reports a case of bilateral parametritis which was operated in by an abdominal incision and drainage. The patient failed to improve and a radical operation was performed some weeks later. The pathological finding was that of actinomycosis. Bondy calls attention to the fact that in cases of dense parametritis with a tendency to break through the abdominal wall and which are exceedingly slow to heal despite good drainage, actinomycosis must be thought of, and the diagnosis established by bacteriological and pathological examination. The treatment is preferably radical extirpation of the diseased tissues; but if this is impossible, the abscess cavity must be widely opened, curetted, and drained, and potassium iodide given internally.

2. **Peritoneal Drainage.**—Fabricius draws attention to the inadequacy of gauze drainage through the posterior fornix in cases in which operations are undertaken for the relief of infected pelvic organs. The gauze becomes saturated with the discharges and prevents, rather than fosters, drainage, making peritoneal infection more likely. He gets better results, he says, by filling the entire small pelvis with gauze and bringing it out through the laparotomy wound which he leaves unsutured for from two to three inches. He has been practising this method for thirteen years, with uniformly satisfactory results.

INTERSTATE MEDICAL JOURNAL

October, 1910.

1. The Treatment of Cancer by Radium, By Louis Wickham.
2. Latest Personal Experiences with the Ehrlich-Hata Remedy (606) in the Treatment of Syphilis, By Wilhelm Wechselmann.
3. Pellagra: Some Clinical and Other Features of the Disease, By George A. Zeller.
4. Further Remarks on Duodenal Alimentation, By Max Einhorn.
5. Functional Disorders of the Genitourinary System, By E. O. Smith.
6. The Value of Auscultation in the Diagnosis of Fractured Ribs, By S T Lipsitz.

2. **Ehrlich's 606.**—Wechselmann says that it cannot be said at present whether 606 actually effects a complete cure. All his patients got well, at least temporarily. His method he describes as follows: 606 is dissolved by rubbing it up in a mortar with from 1 to 2 c.c. of the commercial solution of caustic soda. Glacial acetic acid is added drop by drop until a fine, yellow, slimy sediment appears. The latter is mixed with from 1 to 2 c.c. of sterilized, distilled water. To this solution is added either 0.1 per cent. of the standard solution of caustic soda or one per cent. of acetic acid until litmus paper shows the solution to be exactly neutral. Absolute painlessness of the injection is dependent upon exact neutralization. He injects the remedy subcutaneously under the shoulder blade, after careful disinfection, including the application of tincture of iodine. The very latest modification adopted by him in the method of injection consists of the centrifugation of the emulsion, and the dilution of the sediment obtained in this way with a physiological saline solution. In this way he has succeeded in making the solution itself absolutely painless. Later on the patient experiences slight drawing pains which soon disappear. On the second or third day, there are some swelling and reaction at the point of injection. Usually these are but slight, and only occasionally does a hard infiltration form, which, however, never tends to suppurate, since it seems to represent not an infectious but only an aseptic chemical reaction.

3. **Pellagra.**—Zeller observes that a typical case of pellagra in running its course will present, aside from its visible changes, almost every mental and nerve symptom exhibited in a typical case of paresis, the terminal stages of the two being strikingly alike. It is barely possible that the toxine of pellagra is a poison so subtle that it manifests itself in the delicate centres of the brain, months and perhaps years before external evidences are manifest. He gives the following description of an ambulatory pellagrin: Immediately upon the return of warm weather the pigmentation becomes more pronounced, and by November we can readily recognize the ambulatory pellagrin of two or three years' standing by the discolored hands. Many

times this is ascribed to senile or atrophic changes, but to the trained eye the pellagrous glove is a telltale of no uncertain meaning, even while the victim is wholly unconscious of the slightest ailment. The gastrointestinal symptoms are as striking as those of the skin, except that the internal symptoms simulate numerous other diseases, while the external marks are peculiar to pellagra alone and resemble sunburns only, which can easily be excluded. In fatal cases the mouth presents all the symptoms of severe scorbutus. Aphthous patches abound along the buccal mucous membranes, the tip and sides of the tongue become fiery red, the gums become spongy and bleed on touch. A line of demarcation runs from either angle of the mouth along the lower lip, with the external half dry and stained somewhat of a walnut color, while the inner surface of the lip again shows the lustrous red seen at the height of the erythema on the hands. A persistent diarrhœa sets in and the stools have all the characteristics of dysentery, except that bloody passages are less frequent. At this stage amœbæ are usually present in the stools and flagella abound. Post mortem examination usually reveals a colon that is studded with ulcers of varying sizes and depth. The spleen, kidneys, liver, and pancreas are usually undersized and are purple, almost blue in color. The end comes to such a patient quite painlessly. He does not fall into a coma, but a listlessness and an unconcern comes over him and he seldom complains. The stools are exceedingly offensive, and often when a physician frequents the wards of a pellagrasorium the thought occurs to him that he can detect the disease by means of the olfactory nerves. The face rapidly ages as in Asiatic cholera. Deep lines form in the cheeks and the hollow eyed expression is noticeable. The voice does not become husky as in cholera, but the secretion of urine is lessened. The passages become involuntary and the patient gradually becomes weaker, and, without going to sleep, he passes away so imperceptibly that the nurse is left in doubt for some time as to whether or not the end has come. In the sane a profound melancholia accompanies the disease.

MILITARY SURGEON.

November, 1910.

1. Medical Notes from the Recent Nicaraguan Campaign, By W. S. Pugh, Jr., and D. G. Sutton.
2. The Prevention of Disease in the Army and the Best Method of Accomplishing That Result, By Frederick Smith.
3. The Experience of the German Army with the Defectives and the Feeble Minded, By Robert L. Richards.
4. A Suggested Reorganization of the United States Naval Medical and Hospital Corps, By R. Roller Richardson.
5. Report of the Board for the Study of Tropical Diseases in the Philippine Islands. Quarter Ending June 30, 1910, By Weston P. Chamberlain, Horace D. Bloombergh, and Edwin D. Kilbourne.
6. Hospitals in the Field, By John J. Boaz.
7. A Portable Mosquito Proof Room, By Edward B. Vedder.
8. A Modified Caldwell Kitchen Incinerator for Field Use, By Robert U. Patterson.
9. Report of a Case of Abdominal Diphtheria, By Ferdinand Schmitter.

1. **Medical Notes from the Recent Nicaraguan Campaign.**—Pugh and Sutton report that the bullet most in evidence was the Mauser soft nose. They say that this bullet has a tendency to break up into small pieces and it apparently does this independent of the resistance which the tissues offer. They noted a great breaking up of this bullet even in the skin, but somewhat more so in bone. The jacketed bullet has a tendency to tunnel when striking the skin. The soft nose bullet will sometimes tunnel, but when it does so the tunneling is of wide area and is always followed by a considerable amount of sloughing. Some observers say that there is no occasion to remove small split up fragments. Our authors have never yet seen a fragment of this kind that they did not have to remove. As every piece left suppurated, it at least gave them considerable peace of mind when they were out. When the bullets in question break up they pulverize everything in range and their extraction is often a matter of considerable difficulty. Poly states that the lead bullet has great stopping power and that one who has received a bullet wound from this missile seldom has any desire for further fighting. They agree with the observer, as every wounded man they saw was completely knocked out, and his stamina was broken. One had no cause to wonder at this when he saw these wounds. The shock to the nervous system is terrific. In quite striking contrast to the jacketed Mauser, for which some have told us amputations are seldom necessary, they found quite the reverse, and with one bullet amputations were almost always necessary, when a bone had been struck. The wounds of entrance were as a rule about the size of the bullet or a little larger. This applies to the point of original impact only, for as soon as the bullet enters and encounters the least resistance, that given by the effect of passage through the skin and entering the subcutaneous tissue being sufficient, it begins to spread and many times we were surprised to find a large cavity just beneath the skin. The size of the tract increased as the bullet passed along and at the wound of exit it was extensive. The destruction was often so great that it was difficult to tell such wounds from shell wounds. In fact, they looked as if some one had taken a blunt instrument and torn away a large piece of skin and subcutaneous tissue. This tissue was literally blown away. Devitalization of the skin always took place. If the bullet merely penetrated or grazed the surface a slough always occurred.

3. **Defectives and the Feeble Minded.**—Richards states that stigmata of degeneration are important only when they are multiple. He mentions the following special stigmata: Abnormal smallness of cranium. Misproportion of size of cranium and of facial bones as well as of whole body. This is shown less in the smallness of circumference than in the relative smallness of the longitudinal diameter and the height from the level of the ears. Low, narrow, retreating forehead with projecting eyebrows—a truly simian type. Hydrocephalic type where the circumference of the base is several centimetres less than the circumference two or three centimetres above this. The upper part is pushed out as result of increased intracranial pressure, while the base is fixed. Asymmetries and irregularities are generally due to premature synostosis of bones

of cranium and consequent bulging of other parts. This is the result of a pathological process. Bodily and sexual development are often markedly retarded in these cases.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

November, 1910.

1. Uric Acid in Gout, By A. MAGNUS-LEVY.
2. The Electrocardiogram in Clinical Medicine. II. The Electrocardiogram in Some Familiar Diseases of the Heart, By WALTER B. JAMES and HORATIO B. WILLIAMS.
3. Ipecac in the Treatment of Intestinal Amœbiasis, By WALTER V. BREM and A. H. ZEILER.
4. The Treatment of Arthritis Deformans, By CLARENCE EDWARD SKINNER.
5. The Leg and Arm Phenomena in Tetany, By EUGENE H. POOL.
6. The Significance of Cardiorespiratory and Subclavian Artery Murmurs, By H. R. M. LANDIS and S. A. MUNFORD.
7. The Prognosis in Chronic Valvular Disease of the Heart, By HERMAN B. ALLYN.
8. Intestinal Obstruction, By J. N. HALL.
9. Idiopathic Circumscribed Spinal Serous Meningitis, By T. H. WEISENBURG and GEORGE P. MÜLLER.
10. Dermatitis Herpetiformis in Early Childhood, By RICHARD L. SUTTON.
11. Retention Cysts of the Kidney, By GEORGE G. ROSS.

3. **Ipecac in Intestinal Amœbiasis.**—Brem and Zeiler say the temporary cessation of dysentery in amœbic infections has been an easy thing to bring about in the majority of cases, but the eradication of the infection was long our despair. The former could generally be accomplished by merely keeping the patient at rest in bed on a suitable diet; in an attempt to accomplish the latter, they treated their patients during four years with copious enemata of normal salt solution, quinine solutions in varying strengths up to 1 to 250, thymol solutions up to a strength of 1 to 500, and quinine and thymol combined in solutions of 1 to 500, and 1 to 1,000, respectively. They treated many patients with intestinal amœbiasis both with and without dysentery, and some for prolonged periods of time. Among those with dysentery they never eradicated an infection and amœbæ always reappeared within a few days after treatment was discontinued, and were present when the patients left the hospital. Among the patients without dysentery they cured the infection of one with 1 to 500 quinine enemata and of two with enemata of quinine and thymol, 1 to 500 and 1 to 1,000 combined. They used the bismuth treatment advocated by Deeks and Shaw without success, but they did not give this treatment a thorough test. On account of the recommendation of English physicians, ipecac also was tried, but in an unenthusiastic manner. Without the salol or keratin coated pills the doses given were necessarily small, vomiting was frequent, and the ipecac that was retained had no effect upon the amœbæ. They were sceptical about it, as about bismuth, chiefly because of their knowledge of the pathological conditions with which they had to cope, for it was to them inconceivable that any drug given by the mouth could reach the colon in sufficient amount to be parasiticidal to amœbæ buried deep in the gut wall or protected in ulcers by a thick layer of tenacious, necrotic material. Local applications and surgical interference held out, to their minds, the greatest hope of success in the treatment of this *bête noir* of tropical and subtropical diseases. However, after Dock's communication on the subject, and after one of them had talked with him and with Boggs, of the Johns Hopkins Hospital, who also had used ipecac successfully, they determined to give the drug a thorough trial. Our authors conclude that they have apparently cured fourteen amœbic infections with ipecac; eight with dysentery, followed six weeks to five and one half months with repeated examinations for amœbæ; three with dysentery, followed less than six weeks; three without dysentery, followed from two to five months. They have failed to eradicate the infection in four cases, but these were not thoroughly treated. The thickness of the salol coat of the ipecac pills must be carefully regulated so as to prevent vomiting on the one hand, and on the other, the passage of intact pills through the intestinal canal. Probably the best dosage and method of administration is to begin with sixty or eighty grains at bedtime and decrease the dose five grains daily until a dose of ten grains is reached. Rapid cures may sometimes be effected by giving forty grains three times during twenty-four hours. The patient should be at rest in bed and on liquid diet; no solid food or milk should be given for at least six hours previous to the ipecac, and no liquids for three hours previous. No opiate is necessary. Their experience indicates that a large proportion of amœbic infections can be eradicated by ipecac treatment. It is far superior to any treatment that they have hitherto tested, and it should always be given a thorough trial before surgical treatment is attempted.

4. **Arthritis Deformans.**—Skinner states that arthritis deformans should be strongly suspected when the following conditions obtain: Whenever a case of joint inflammation presents simultaneous involvement of corresponding joints on both sides of the body; whenever the maxillary articulation is involved; whenever the joints of the fingers or toes are involved; whenever muscular atrophy accompanies the outbreak. Rheumatism will sometimes produce atrophy of the controlling musculature, by compelling disuse of the joint, but this takes place in the later stages of the attack. In arthritis deformans, the atrophy frequently precedes the joint outbreak. Whenever a case is accompanied, or has been preceded, by local sweats, local syncope, or local asphyxia of the parts affected, or of the corresponding parts on the other side of the body when but one side is frankly diseased. Whenever trophic or pigmentary changes are apparent in the skin over, or in the neighborhood of, the affected joints, in the clavicular regions, or on the outer aspects of the forearms or lower legs. Whenever a patient gives a history of having had, for some time preceding the outbreak, stiffness or soreness of joints immediately after wakening in the morning, which disappeared after using the joints a little. Whenever a case of "stiff neck" proves resistant to ordinary methods of treatment. Whenever a case of apparently rheumatic joint inflammation resists thorough salicyl medication vigorously for more than a week. As to treatment, he remarks that in order to get the most out of these various remedial measures, it is

necessary that they be applied with intelligent system, and a routine standard is necessary as a point of departure; this can be modified to suit the individual peculiarities of the various types of the disease, and the variations in the patient's condition from week to week. The treatment which has given him the most satisfaction is: Rest in a bed for at least ten hours out of the twenty-four. A diet as generous as can be digested and assimilated by the individual patient, without producing putrefaction or fermentation. From 1/30 to 1/40 grain of strychnine sulphate, and two or three grains of ferrous iodide, three times daily, half an hour before meals; and in emaciated cases from one to four drachms of codliver oil, after meals. A dose of some one of the various mineral waters, before breakfast, every two or three days, if constipation is present. A body dry hot air treatment two or three times weekly. Central galvanization once or twice weekly. A general application of mechanical vibratory stimulation two or three times weekly. A static electric application at least once every day, consisting, in acute cases, of the Morton wave current over the affected joints or spine, and in the chronic cases of long, thick sparks to the affected joints one day and the Morton wave current localized over these joints the next. In some cases one of the high frequency currents, applied either locally or generally, may advantageously replace some of these static applications, or be added to them. A hot and cold douche to the spine two or three times weekly. This scheme can be added to or otherwise modified, so that the emphasis of the weekly schedule can be laid upon any measure which may be indicated in a given case.

7. **Chronic Valvular Disease of the Heart.**—Allyn remarks that the prognosis of chronic valvular disease of the heart in private practice is much better, both as to duration and capacity for work, than most persons realize. It is no uncommon experience to find persons who have sustained these lesions for ten, fifteen, and twenty years, in some cases much longer, without either great discomfort or great impairment of their activity. The patients who sustain these lesions longest and with least embarrassment are those of temperate habits and spare build who do not easily become angered or worried and who are controllable as to their mode of life and activities. Those who can lead a quiet, sheltered, protected life naturally live the longest. When death occurrs it is usually the result of some accident or intercurrent disease, not directly from the heart. In estimating the prognosis in a particular case one needs to keep in mind the distinction between a heart lesion and heart disease. As long as there is only a lesion the prognosis is good. A lesion ceases to exist and disease sets in when the heart enlarges and subjective symptoms appear. In his opinion subjective symptoms are better guides to the functional energy of the heart and to its lasting power than are objective signs. In angina pectoris the duration may be five years instead of the conventional one or two, just as some patients with aortic insufficiency may, under favorable conditions, last for thirty or forty years instead of the ten years which Clifford Allbutt says is the average.

Proceedings of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-sixth Annual Meeting, held in Detroit, September 13, 14, and 15, 1910.

The President, Dr. Frank P. Norbury, of Hospital, Ill., in the Chair.

(Concluded from page 944.)

A New Principle in the Treatment of Graves's Disease.—Dr. George W. Crile, of Cleveland, said that the benefits which followed the ligation of the superior thyreoid artery were due for the most part to the break of the nerve supply which was inevitable in the course of the ligation. In Graves's disease the thyreoid showed a work hyperplasia, and the brain cells showed a work exhaustion. In Graves's disease the brain sent a more or less constant flow of stimuli into the thyreoid gland. The thyreoid responded by an increase of its secretion. This increased secretion of the thyreoid caused an increased activity of the brain cells. In this manner the brain and the thyreoid goaded each other, and this deadlock, if not broken, continued until one or the other was worn out. This, he believed, was the explanation of the curious ending one occasionally observed, namely, the sequence of myxœdema and Graves's disease. Breaking of the nerve connection between the brain and the thyreoid gland rendered Graves's disease curable. No case of Graves's disease was cured by operation alone, and no case was cured until the thyreoid gland and the brain were both restored to the normal. This was best secured by operating in such a manner that there was no excitation of the nervous system nor of the thyreoid gland; hence no volatile outbursts during or after the operation, and no operative danger; then placing the patient on a rest cure for a month or more, depending upon the severity of the disease. If, on the other hand, the patient after the operation was at once immersed in the environment in which the disease originated, there would be many disappointments. The plan of treatment by a combination of a benign operation, followed by a prolonged rest cure, would restore the patient in so far as tissues were not already irreparably destroyed, to the bloom of health.

Dr. G. V. I. Brown, of Milwaukee, read a paper in which he described the surgical operative steps in the closure of cleft palate.

The Surgery of the Great Sciatic Nerve.—Dr. B. M. Ricketts, of Cincinnati, read a paper on this subject in which he reported two cases of complete severance with subsequent suture. He drew the following conclusions: 1. Compression for sciatic neuralgia hardly justified the effort. 2. Acupuncture with the injection of medicaments through an open incision was to be recommended. 3. Acupuncture without open incision was most difficult and uncertain to accomplish. 4. The use of a metal wire and tube for direct multiple injections should be encouraged. 5. Stretching the nerve for neuralgia had been more or less beneficial, and was second in choice before more radical measures were employed. 6. Neurotomy without suture was to be condemned, but it should be employed before sacrificing any of the nerve tissue. 7. Neurectomy was the last of surgical measures to be employed for neuralgia. 8. Neurorrhaphy (primary or secondary) should be done in cases where the nerve had been partially or completely severed by any cause. 9. The great sciatic nerve might be completely divided and remain so indefinitely without great loss of sensation. 10. Both sensation and motion might be improved or completely restored by coaptating the severed ends with sutures. 11. Small needle and silk were attended with less trauma than those of larger size. 12. Anæsthesia might be local or general.

Office Treatment of Antral Disease.—Dr. William W. Pennell, of Mt. Vernon, O., stated that many simple forms of empyema were amenable to office treatment. The requisite amount of drainage could be effected under cocaine anæsthesia. There were cases where tooth extraction and curetting and closure of the alveolar fistula had to be practised, but these were made simpler by efficient drainage, astringent washes, and cleanliness. Even the graver forms were made more amenable to radical operation where drainage and washings had been practised as preparatory treatment. After drainage had been established, washes of sterile normal salt solution were the only medicaments used in simple empyema; while in those having dental complications, extraction of teeth, and those having thickened antral membrane from prolonged inflammation, curetting and the use of astringents, were added to the simple washes.

The Surgery of Musculospiral Paralysis.—Dr. A. H. Barkley, of Lexington, Ky., read a paper on this subject in which he drew the following conclusions: 1. Many patients have been operated on, but comparatively few cases reported. 2. In cases of trauma, associated injury of the musculospiral nerve might be and frequently was overlooked. 3. The anatomical position of this nerve rendered it peculiarly liable to trauma. 4. Injuries, such as fractures, falls, and blows, were the most frequent causes, in the order named. 5. It occurred with equal frequency in both arms, the middle and lower third being the most often affected. 6. The musculospiral was injured more often than any other nerve and the injury not infrequently served as a ground for legal action. 7. It was more frequent in males and might occur at any age, more especially between ten and thirty years. 8. In cases where complete loss of sensation and motor function followed severe injury, the probabilities were that the nerve had been injured, and operative interference was indicated. Cases following slight trauma often ended in recovery without an operation; however, if no improvement was noticed after two or three months, an operation was justified. 9. Secondary cases sometimes presented technical difficulties not present in primary cases. 10. No one symptom was pathognomonic and the pathological condition varied so widely that it was impossible to state before operation with much certainty the exact condition present in a given case. 11. The prognosis was good in clean cases. Especially was this true where an operation had been resorted to early. One of the most important determining factors was the length of time the injury to the nerve had existed. 12. Operative treatment depended in the individual case; the earlier the operation the better the result. Small round needles and fine silk had given the best results in the hands of the writer. 13. All patients with injuries to the arm, especially fractures, should be impressed with the possibility of musculospiral trouble.

The Acute Abdominal Manifestations of Syphilis.—Dr. Louis A. Levison, of Toledo, O., in a paper on this subject summarized as follows: 1. Syphilis showing acute abdominal manifestations was not uncommon, but was not generally recognized. 2. The liver was the organ most often affected. 3. Abdominal manifestations occurred more often in the tertiary stage. 4. Syphilis of the stomach could simulate most of the ordinary gastric diseases. 5. The symptoms of acute abdominal manifestations of syphilis were in no way diagnostic and included pain, tenderness, fever, jaundice, chills, and sweats. 6. The gastric crises of tabes might be considered syphilitic in their nature.

The Wassermann Seroreaction Test.—Dr. W. T. Mefford, of Chicago, spoke on the value of this test to the physician. As to what class of patients he would recommend for a Wassermann test, he would say that all persons giving a history of syphilis, either inherited or acquired, and all persons with clinical symptoms simulating syphilis, and in late manifestations of syphilis. He would use it as he would a urinary or sputum examination, or blood count, placing the Wassermann test side by side with these as an assistance in making up the clinical findings. In all cases where he got a positive reaction he would put the patient upon mercurial treatment.

Pyloric Stenosis in the Infant.—Dr. W. D. Haines, of Cincinnati, reported a case in which he had operated for the relief of this condition. The child was removed to a hospital and a posterior no loop gastrojejunostomy was performed. Twenty-four hours after the operation the child showed no distress after taking nourishment and had continued free from his old symptoms. Except constipation, all the symptoms had disappeared, and, though still under size, the child was thriving and playful five months after the operation.

Pleural Effusions, their Diagnosis and Treatment.—Dr. E. B. Montgomery, of Quincy, Ill., in this paper pointed out the importance of early diagnosis, and as a means of deciding doubtful cases, in addition to auscultation and percussion, needling, not only once, but repeatedly, if necessary. The use of sodium salicylate was advised in the treatment of small serous effusions, to be followed by aspiration if the fluid did not disappear in ten days or two weeks. For empyema the importance of a bacteriological diagnosis of the character of the infection was urged as a preliminary to correct treatment. Some pneumococcus empyemata yielded readily after aspiration to the injection of two ounces of a two per cent. solution of formalin in glycerin. Others required intercostal incision and continuous drainage by one of the various types of drainage tubes, rib resection being rarely called for. To hasten the cure of small empyematous cavities and fistulæ, attention was called to the value of injections of Beck's thirty-three per cent. bismuth petrolatum paste.

The Ætiology of the Functional Neuroses.—Dr. Eleanora S. Everhard and Dr. Gertrude Felker, of Dayton, O., contributed a joint paper on this subject in which they drew the following conclusions: 1. That the common element in the assigned causes of the functional neuroses was to be found in the fact that the mental processes were not directed; therefore, the patient was the victim of any stimulus which chance might keep before the mind, and that there was no limit to the destruction of efficiency which might result. 2. That those symptoms commonly called nervousness were worthy of serious consideration because they indicated some degree of lack of control of nerve processes. 3. That self indulgence, by training the mind to follow the lines of least resistance, predisposed to these neuroses. 4. That the value of living in accord with the laws of hygiene could not be overestimated, both because of its influence upon nutrition and because it required a measure of self control, but that alone was insufficient. 5. That conditions of life which demanded of the individual in his vocation or avocation less exercise of attention and will than he was capable of enduring without fatigue bore to his nervous system the same relation that lack of muscular exercise bore to his muscular system. 6. That intelligent education at any age was effective, but since the ideal was prevention, the habit of directing mental processes should be established early.

Dr. Charles F. Read, of Hospital, Ill., spoke of the psychic factors in the causation of certain functional psychoses, and presented clinical studies.

Dr. Liston H. Montgomery, of Chicago, read a paper in which he spoke of the rôle of the physician, philanthropist, publicist, and politician, regarding a Federal department of health. He said that when a national department of health was established it would be capable of rendering the greatest amount of good to the greatest number of happy people, and thereby the prospects of longevity of man, ideal citizenship, and posterity would be greatly enhanced, for which the medical profession would stand as sponsor.

The Standardization of Bacterins.—Dr. Roswell T. Pettit, of Ottawa, Ill., spoke of the value of bacterin therapy as a general aid to local treatment in certain types of bacterial infections, which was at the present time pretty well established. In the preparation of vaccines he did not try to estimate the number of bacteria present in a given volume. He took up a twenty-four hour blood agar growth of streptococci in a definite amount of salt solution, shook thoroughly, centrifuged to throw down the clumps, put in a bottle specially prepared, and killed by heat or carbolic acid. Then he made a one tenth of one one hundredth dilution of this full emulsion and gave an initial dose of five c.c. This induced very little or no reaction. The dose was then increased up through the one tenth dilution and full emulsion to the point of local reaction. Then he proceeded very slowly, keeping in mind that the reaction induced and results obtained were the true indices of the dose. The reaction to be aimed at was a slight or moderate local reaction, an area of redness of about the size of a dollar, without the localizing or general phenomena. By using increasing doses up through a series of dilutions this could be procured with a fair degree of accuracy, and an estimation of the number of bacteria used was entirely superfluous. The full emulsion could be called one hundred per cent. and ten per cent. and one per cent. dilution of this full emulsion made. The doses could be recorded as 0.1, 0.2, 0.5, 0.7, c.c., etc., of the one per cent., ten per cent., or one hundred per cent. emulsion. The advantages of a dilution method of estimating bacterial suspensions over a numerical were several. 1. The reaction, the real index of the dose was relied upon and the empirical administration of bacterins was made less likely. 2. An index of antibody production was aimed at. 3. By using this method vaccines could be prepared with much greater rapidity—at least an hour was saved on each bacterin prepared—and if bacterins proved to be of value in acute infections, and the recent work of Dr. Rosenow, of Chicago, on artificial immunization in pneumonia seemed to point in this direction, the time saved would be a very important factor.

Dr. Nathan Rosewater, of Cleveland, read a paper in which he pointed out the nonoperative treatment of the prolapsed and dilated stomach and abdominal viscera.

The Treatment of Pernicious Anæmia Associated with Achylia Gastrica.—Dr. Alfred C. Croftan, of Chicago, submitted a clinical report in regard to the treatment of a certain group of pernicious anæmia cases and reported on three patients who had been improved rapidly and had remained symptomatically well without remissions until the present date. The one constant factor in the cases of pernicious anæmia observed during a period of years that were not distinctly attributed to the effect of syphilis, carcinoma, parasites, or profound and continuous loss of blood, was a lack of hydrochloric acid in the stomach contents, associated with a variety of digestive disturbance allied with varying degrees of chronic undernutrition. That all cases of hyperchlorhydria and all cases of chronic undernutrition did not lead to pernicious anæmia called for the inclusion of some specific factor or factors hitherto unknown. At all events, the supplying of large quantities of hydrochloric acid, together with abundant proteids by the mouth and rectum, seemed a favorable method of attack and was persistently carried through with gratifying results. The conclusion was drawn that a trial of this plan in this group of cases was decidedly worth while and seemed to produce results not otherwise obtainable by any means so far described.

The Diagnosis of Trifacial Neuralgia.—Dr. Hugh T. Patrick, of Chicago, stated that in the vast majority of cases the diagnosis of tic douloureux should be easy and certain, as the traits of the disease were few and striking. But the author had had quite a number of other disorders referred to him as trifacial neuralgia. The most frequent had been migraine and sinus disease. Others were syphilis, brain tumor, alveolar abscess, and other dental disease, nasal disease, herpes zoster, neurasthenia, and lesion of the optic thalamus.

The pain of trifacial neuralgia was practically unique. There was nothing else just like it. It was short and sharp, in the beginning only a flash or jab or shot. The interval might be anywhere from a second or two to weeks or months. In the fully developed disorder the paroxysms might last a minute or two and the free intervals be so short that the pain seemed continuous. It never really was so. Nearly every patient had intermissions of weeks, months, or even years during which he was entirely free from pain. One of the most striking peculiarities of the affection was that the paroxysms of pain were started by slight peripheral irritation, such as washing the face, using a handkerchief, stroking the mustache, or the touch of a glass to the lips. He thought that the automatic act of winking often acted as an excitant. Such a slight sensory stimulus in the area of one division of the nerve might occasion pain in another division. For instance, touching the lower lip might start a pain, not in this region, but in the supraorbital area.

Water, the Main Factor in the Prevention of Disease.—Dr. J. C. Minor, of Hot Springs, Ark., stated that the significant points in his paper were: First, nutrition and elimination were the main factors in maintaining health, but of the two, elimination was absolutely necessary and must be continuous and invariably performed equally by the sewers of the body. There was little or no vicarious action in the emunctories in health and disease. We could not flush sewers without water, and if regular flushing was to be had the water must be furnished the body regularly, and the purer the better. Second. normal resisting power prevented invasion of any and all diseases. Normal resisting power depended upon normal distribution of food, normal lubrication of all structures, and normal excretion of all waste products. Third, unless food was distributed to the system properly, it would become a detriment instead of help to the system. It could not be distributed to the system properly without the proper amount of water taken in at the proper time. The stomach was the kitchen in which pabulum was prepared for the system. The small intestine was the table from which the system was served. The system would be served with only just enough, the remainder of the ingesta was thrown through the cæcal valve into the sewer. If food was badly digested the system rejected it. If food was more than the system required the surplus was also rejected. All the rejected food was an irritant to the cæcal region. Fourth, there was a proper time for taking the proper amount of water. One's judgment should govern the measure of water to be taken with food. To take too much water just before, during, or just after a meal would, so to speak, be to put the fire in the kitchen out, while not enough fluid would compel the stomach to borrow too heavily from the systemic volume. The one would retard digestion, and the other would give imperfect digestion.

The Gradual Evolution of a Sane Therapy in Tuberculosis.—Dr. F. M. Pottenger, of Monrovia, Cal., contributed a paper on this subject. Among other things he said that the position of the sanatorium in the rational treatment of tuberculosis was very important. If the sanatorium was conducted on the proper lines, it afforded the best circumstances under which the known measures which had influence in building up and curing the patient might be applied. The home treatment, however, was one of the greatest boons to tuberculous patients, because most patients were not able to be treated in sanatoria and must be treated in their own homes. The true position of home treatment, however, could be readily understood by the fact that it was an attempt to apply sanatorium régime and sanatorium conditions to the home.

Intestinal Surgery, with a Demonstration of a New Method of Suturing the Bowel.—Dr. A. E. Benjamin, of Minneapois, stated that the various instruments and appliances formerly used to facilitate the surgeon in his work upon the intestines had about all been discarded for the simple but efficient method of intestinal anastomosis by thread and needle. The work should be carefully but rapidly performed, which was often the case where the surgeon had from practice or experimental work upon the lower animals become skilful in the use of needle and thread. A positive blood supply to the tissues making up the anastomosis was necessary. The end to end method was not so certain; therefore the side to side anastomosis should be chosen when convenient. The evolution of the intestinal suture had brought us to the point where we were certain of good results when the sutures were properly applied and were of the right material. Nonabsorbable suture material should be cast off into the lumen of the intestine after serving its period of usefulness, and this was best accomplished when used for the inner layer. There was then less destruction of tissue. When placed externally it produced unnecessary adhesions, plastic exudate, and fibrous bands. It might interfere with proper bowel function, because of its prolonged irritation. Absorbable suture material used for the outer layer was soon taken care of and did not cripple the action of the intestine. The application of the suture in intestinal work had been carefully studied. It must serve the purposes of controlling hæmorrhage, proper coaptation of the tissues, and security against leakage, and must avoid pursing, be quickly introduced, and not strangulate the tissue. The back lock stitch of Pagenstecher's thread as applied by the author for the inner layer served all these purposes. Experimental work had demonstrated that chronic catgut lasted sufficiently long when employed on the outer suture for positive and firm union to occur. The after treatment of cases of suturing the bowel should be carefully supervised by limiting the diet, using starvation treatment if necessary, until the union was sufficiently strong before it became necessary for the bowels to be called upon to pass their contents onward. A clean and satisfactory result was obtained with the inner Pagenstecher lock stitch and a chromic catgut for the outer in intestinal anastomosis.

Officers.—The following officers were elected: President, Dr. Robert H. Babcock, of Chicago; vice-presidents, Dr. Arthur D. Holmes, of Detroit, and Dr. Charles E. Barnett, of Fort Wayne, Ind.; secretary, Dr. Henry Enos Tuley, of Louisville; and treasurer, Dr. S. C. Stanton, of Chicago. The selection of the place of meeting and of the chairman of the Committee of Arrangements for 1911 was left to the Executive Committee with power to act.

Letters to the Editor.

AN EDITOR'S LAMENT.

1421 COURT PLACE, DENVER, COL., *November 1, 1910.*

To the Editor:

To medical librarians and all booklovers: The year 1898 will be known in the annals of medicine by an epoch making event. In that year *Medical Libraries,* a bimonthly publication devoted to the interests of medical libraries, first saw the light of day in the city of Denver. For several years it made its irregular and spasmodic appearance and closed its career in a blaze of glory A. D. 1902. Its circulation reached the astounding number of one hundred and twenty. What it lacked in number it made up in quality. Among its admirers, subscribers, and contributors it counted the foremost librarians of the day—Dana, Fletcher, Chenley, Billings, Grace Bryant, Fisher Parsons, Dudley, Beer, Aheren, Putnam, Bowker, Meyers, Utley, Bowen, Noyes, Crunden, Chase, Dewey, Merrill, and the medical luminaries, Osler, Chadwick, Keen, Da Costa, Musser, Simmons, Edward Jackson, Hare, Horatio Wood, Solis-Cohen, Hutchinson, Gould, Dock, Senn, Bonney, Eskridge, and many other makers and lovers of books.

Now comes the proud editor and publisher of said defunct periodical and offers to send to all medical librarians and to all who are interested in freak medical journalism complete sets of Vols. ii, iii, and iv and incomplete sets of Vols. i and v for the asking. All the said sad editor asks in return is that these, his dear departed ones, be reverently laid out, decently shrouded, adequately coffined, properly epitaphed, securely inhumed, and unostentatiously gathered unto their fathers in God's acre. He devoutly and prayerfully hopes for their resurrection. C. D. SPIVAK, M. D.

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Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

Anatomy, Descriptive and Applied. By HENRY GRAY, F. R. S., Fellow of the Royal College of Surgeons; Lecturer on Anatomy at St. George's Hospital Medical School, London. Eighteenth Edition. Thoroughly Revised and Reedited with additions by EDWARD ANTHONY SPITZKA, M. D., Professor of General Anatomy in the Jefferson Medical College, Philadelphia. Illustrated with 1,208 Engravings. Philadelphia and New York: Lea & Febiger, 1910. Pp. xxiv-1496. (Price, $6.)

The eighteenth edition of *Gray's Anatomy* has been entirely changed. Even the title has been altered. It is now *Anatomy, Descriptive and Applied,* not, as we have been used to seeing it for over half a century, *Anatomy, Descriptive and Surgical.* For over fifty years the title had remained unchanged, but although we are sorry to see this alteration we must admit it is more correct. The revision and reediting have been undertaken by Professor Spitzka alone, and the work seems to have been very thorough; there is hardly a page of the eighteenth edition which reads the same as the seventeenth, from the contents to the index. The arrangement has been entirely altered; some parts have been enlarged, others have been condensed, and duplications have been avoided, thus making it 1,496 pages instead of 1,614, while the illustrations have been increased from 1,140 to 1,208. It seems to be the most thorough revision to which *Gray's Anatomy* has ever been subjected.

In our review of the seventeenth edition (November 21, 1908, p. 1009) we stated that there were numerous errors in the spelling of anatomical names; some of these mistakes have been corrected, but many others have not. This is to be deplored, as such a textbook should be as correct as possible. Our anatomical nomenclature is, at the best, very poor, and our teachers and textbooks should therefore be very careful. Gegenbauer should be Gegenbaur (p. 850) and we should find mamillaria, and not mammillaria (p. 851), stria olfactoria, and not olfactorius (p. 928), striæ mediales, and not medialis (p. 995). The genitive of clitoris is rightly given as clitoridis, but we still find on pp. 1225 et seq. glandulæ parotis (instead of parotidis).

Die Gicht und ihre diätetische Therapie. Von Prof. Dr. A. SCHITTENHELM, Erlangen, und Privatdozent Dr. J. SCHMID, Breslau. Halle a.S.: Carl Marhold, 1910. Pp. 38.

The authors give a good, concise dietetic treatment of gout, basing it upon the well known fact that in gouty people the uric acid is carried from the kidney through the blood and deposited in the joints, fasciæ, bones, etc. In normal people we find uric acid sometimes in the circulation after a meal rich in purin. The nourishment of the gouty must aim, therefore, to reduce as much as possible the formation of uric acid and the stimulation of its secretion.

The Principles of Pathology. By J. GEORGE ADAMI, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGill University, and Pathologist in Chief to the Royal Victoria Hospital, Montreal, etc. Volume I. General Pathology. Second Edition, Revised and Enlarged, with Three Hundred and Twenty-nine Engravings and Eighteen Plates. Philadelphia and New York: Lea & Febiger, 1910. Pp. xviii-1027. (Price, $6.)

We can hardly add anything further to what we have said in our review of the first edition of this monumental book. It must be read, studied, and digested before it can be appreciated. Every physician should strive to reach such a position that he can take up this book in his leisure hours and read it over and over again.

Operative Chirurgie der Harnwege. Normale Anatomie und chirurgische pathologische Anatomie. Von J. ALBARRAN, Professor für die Krankheiten der Harnwege an der Medizinischen Fakultät zu Paris, Chirurg am Hôpital Necker. Ins Deutsche übertragen von Dr. EMIL GRUNERT, Spezialarzt für Chirurgie in Dresden. Zweite Lieferung. Mit 157 teils farbigen Figuren im Text. Jena: Gustav Fischer, 1910. Pp. 321-720.

This is the second part of the German translation of Albarran's work *La Médecine opératoire des voies urinaires.* We spoke of the first part in our Book Notices of July 9, 1910 (see page 97). We suppose there will be three such deliveries which begin and end abruptly, and, when finished, should be bound together. The present part brings the conclusion of extraperitoneal nephrectomy and describes transperitoneal operations on the kidney. It gives the anatomy, pathology, and surgery of the ureter, including ureterotomy, ureterorrhaphy, ureteroureterostomy, ureterolithotomy, transplantation of the ureter, ligation of the ureter, and ureterectomy. The bladder is then taken up. Its anatomy, pathology, and surgery include the extraction of foreign bodies, lithotripsy, puncture, suprapubic section, cystectomy, cystoscopical treatment, and peritoneal section, of which only one page appears. A third *Lieferung* will conclude the work.

The Practice of Medicine. A Guide to the Nature, Discrimination, and Management of Disease. By A. O. J. Kelly, A. M., M. D., Assistant Professor of Medicine in the University of Pennsylvania and Assistant Physician to the University Hospital, Philadelphia, etc. Illustrated. Philadelphia: Lea & Febiger, 1910. Pp. xix-945. (Price, $4.75.)

The book devotes most of its space and attention to the practical aspects of medicine, to the clinically important and more common disorders rather than to rarer diseases. And thus in reality it is what the title promises, "a guide to the nature, discrimination, and management of disease." As it is a practical book, the author has placed emphasis upon symptomatology, diagnosis, and treatment, and has devoted more space to these than to ætiology and pathological physiology. The book treats in twelve sections the field of medicine: Infectious diseases, intoxications, disorders of metabolism, diseases of the ductless glands and of internal secretion, of the blood and hæmatopoietic system, of the systems of circulation, of respiration, and of digestion, of the urinary and nervous system, and of the diseases of the muscles and of the bones and joints.

The book is well got up and worthy of the publishers, who have lately added so many medical books of real value to the long list of American medical publications.

MEDICOLITERARY NOTES.

The introduction of "606" may reconstruct our therapeutic methods. We shall have to wait for some score of years, however, to see if all those treated escape without palmar, plantar, or osteal reminders; if 1930 is to reap no crops of tabes dorsalis, optic atrophy, gummata, cerebral tumors, and other gruesome relics of lues. It is a novel therapeutical concept, that of a remedy rushing through the channels of the body, remorselessly crushing out the trembling spirochætes from grandsire to remotest offspring, and leaving no trace of a tribe that, according to all precedent, could expect a comparatively undisturbed tenure of their quarters for two decades at least. One is reminded of the action of quinine on the plasmodia, but in the case of syphilis we are told that no cachexia remains.

* * *

Of all inept comments on "606," that to the effect that it will increase immorality is most absurd. There are certain vices from which no fear of punishment has ever restrained, and safety from which lies only in flight, like Joseph's from Potiphar's wife. "The gods are just and of our pleasant vices do make whips wherewith to scourge us." The gods will remain in court no matter what science may accomplish in the mitigation of physical penalties.

* * *

Never Told Tales, by Dr. William J. Robinson, has reached a third edition, showing that these plain scissorings from real life are having a deservedly wide sale. They are hardly to be regarded as works of art. A heroine, for instance, who suffers from difficult micturition and a ruptured tube during her honeymoon is indeed an object of commiseration, but there is a lack of artistic reserve concerning her symptoms that must be rather shocking to a lay reader. These tales therefore, it will be seen, occupy a field of their own, but they are none the less to be highly commended as conveying facts that should be familiar to every young man and woman, in a form more likely to be read than scientific treatises, however "popular." It would be a grand result of Dr. Robinson's labors if some of the campaigning against alcohol could be diverted toward the pale spirochæte and the double gonococcus, concerning the ravages of which there are no two opinions.

* * *

There is a very plain talk about these same dangerous pathological agents by Dr. William Lee Howard in the November *Pearson's*. In The Havoc of Prudery Dr. Howard points out the curious anomaly that words like gonorrhœa and syphilis are barred from the reading columns of newspapers and appear, or used to appear, only in the most outrageous quack advertisements. The article will bring great comfort to young men who may have been frightened by terrifying advertising and gives useful advice on the practical prevention of venereal disease. Dr. Howard not only cries Havoc! but lets slip the dogs of war on the meanest of all quacks.

* * *

"It is well known," remarked Dr. Ben Trovato, "that oophoritis raises Cain with a woman's health. Perhaps I may be permitted to say that, if the condition is complicated with a salpingitis, what is really raised is Tubal Cain."

* * *

Current Literature for November devotes considerable space to the recent arguments in England over the effects of alcohol on success in life, to the bacteriology of cholera, and to Dr. Joseph Jastrow's decision that the founder of Christian Science is probably a paranoiac. *Current Literature* is an excellent publication for a busy doctor, as its scope is larger than is implied by its name and it gives monthly a summary of the important news of the world in all fields. The news is given without comment.

* * *

Experimental physiology, although discovered only recently by the antibodies, is a venerable science. Pope refers to it in his *Moral Essays*, Epistle I:

> Like following life through creatures you dissect,
> You lose it in the moment you detect.

* * *

Professor Franz Adolph Meyer, of Berlin, is an expert criminologist who plays an important rôle in The Garb and the Man in the November *Red*

Book; excellent fictional use is made of stigmata and the rest. There are fifteen other pretty good stories in this issue. The supply to draw from seems to be ample, as the editors have stated that they reject some 1,800 contributions every month. A rough but conservative estimate would place the number of short stories circulating through the editorial offices of all the popular magazines at about a thousand every twenty-four hours. The majority of these publications aver with great solemnity, however, that every manuscript is carefully examined and that the offering of available material is lamentably small. Story writing would seem to shine as an avocation rather than a life calling.

* * *

In the French *lycées* and seminaries fiction writing is regularly taught during two years of the course, a third year being given to the composition of imaginary speeches or orations under given circumstances. We are not prepared to state to what extent our public schools encourage the art of English composition, but it seems that, among young graduates, the ability to write correctly even a short letter is too rare. There is not a single trade or profession in which such ability is not valuable, and to a medical student it should be indispensable.

* * *

The prestige earned by Charles Dickens seems to have prevented his descendants from going to work, and many of them are now in straitened circumstances. The November *Strand* advocates the issue of a two cent stamp to be placed in each volume of the novelist's works by the owner. We paid a fair price for our own set of Dickens and, while willing to invest in a few stamps, we think perhaps the publishers could manage something. Couldn't they offer each ablebodied descendant a job, from the bindery to the copy desk, according to ability? There is something about this stamp scheme that suggests a heritage of the Micawberism that Dickens is said to have attributed to his father.

NEW PUBLICATIONS.

Cautley, Edmund.—The Diseases of Infants and Children. New York: Paul Hoeber, 1910. Pp. xvi-1042. (Price, $7.)

Stoeltzner, Wilhelm.—Oxypathie. Mit 16 Kurven. Berlin: S. Karger, 1911. Pp. 92.

Transactions of the American Otological Society. Forty-third Annual Meeting, held in Washington, D. C., May 3 and 4, 1910. Volume XII, Part I. New Bedford, Mass.: Published by the society, 1910. Pp. 272.

Sutton, Howard A., and Drinker, Cecil K.—Osteology and Syndesmology. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xii-225.

Nitze, M., und Jacoby, S.—Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Erkrankungen des Urogenitalapparates. Herausgegeben von Prof. Dr. R. du Bois-Reymond, Berlin, Dr. C. P. C. Bosch, Haag, Prof. Dr. C. Bruni, Neapel, et al. Und unter Mitwirkung von J. Albarran, Paris, A. Bier, Berlin, H. Fenwick, London, A. von Frisch, Wien, H. Kümmel, Hamburg, und H. Young, Baltimore. Redigiert von Prof. Dr. A. Kollmann, Leipzig, und Dr. S. Jacoby, Berlin. V. Jahrgang. Bericht über das Jahr 1909. Berlin: S. Karger, 1910. Pp. iv-463.

Lowry, Edith B.—Confidences. Talks with a Young Girl Concerning Herself. Chicago: Forbes & Co., 1910. Pp. 94. (Price, 50 cents.)

Cooper, Arthur.—The Sexual Disabilities of Man and their Treatment. Second Edition, Revised and Enlarged. New York: Paul B. Hoeber, 1910. Pp. 204. (Price, $2.)

Eager, James Henry Lovell.—Courtship under Contract. The Science of Selection. A Tale of Woman's Emancipation. New York and Passaic, N. J.: The Health Culture Company; London: L. N. Fowler & Co., 1910. Pp. 440. (Price, $1.20.)

Miscellany.

Bureau of Public Health and Marine Hospital Service.—Surgeon General Walter Wyman delivered an address a short time ago, which appeared in the *Public Health Reports* of September 23, 1910. He said:

> The Bureau of the Public Health and Marine Hospital Service at Washington consists of seven distinct divisions, each presided over by a commissioned medical officer. These divisions are: 1, Scientific research and sanitation; 2, foreign and insular quarantine and immigration; 3, domestic (interstate) quarantine; 4, sanitary reports and statistics; 5, marine hospitals and relief; 6, personnel and accounts; and, 7, miscellaneous division.
>
> Each division has special quarters and special clerical force. All the officers in the outside service, whether at foreign ports, insular possessions, maritime quarantine stations, immigration stations, those engaged in suppressing epidemics, in conducting the Marine Hospital relief stations, or in scientific investigations of disease in the field or in the laboratory—all come under the jurisdiction of one or other of these divisions of the bureau. The operations of the divisions are coordinated and brought under the direct supervision of the Surgeon General by special bureau regulations.
>
> The field covered by each division is indicated by its title and in the foregoing statements. To these, however, may be added, as transactions conducted through the division of scientific research and sanitation the following, viz: A thorough investigation and report on mercury vapor illumination as affecting vision, this illumination being used in the government departments and elsewhere; a collective investigation concerning the milk dispensaries in the United States and their utility in the prevention of infant mortality; the proceedings of a commission to investigate pellagra, and a continuation of the labors of the typhoid board in the District of Columbia. The division of scientific research and sanitation supervises the detail and the reports of officers ordered to attend national and State medical societies and sanitary organizations and prepares for publication the proceedings of the conferences between the service and State boards. It conducts the correspondence relating to the International Sanitary Conferences of the American Republics and the International Sanitary Office at Paris, and other correspondence with foreign countries through the State Department relating to medical and sanitary topics. Through the division controlling maritime quarantine, 16,766 vessels were inspected during the last fiscal year at domestic, insular, and foreign stations, involving inspection also of 1,433,134 persons (passengers and crews) and the disinfection of 1,603 vessels on account of actual infection or for the destruction of rats and mosquitoes, the carriers of plague and yellow fever.
>
> Under the division of domestic (interstate) quarantine may be mentioned investigation and aid in the matter of typhoid fever at Omaha, Chicago, and Williamson, W. Va.; investigations into typhoid among seamen and on vessels of the Great Lakes; an investigation on the Pacific coast with regard to plague.
>
> In the division of personnel and accounts are kept the records of the officers and of expenditures from the appropriations. The running expenses of the service are annually about $2,000,000.
>
> The miscellaneous division of the bureau has control of the issue of service publications, enumerated in part as follows: *Annual Reports, Public Health Reports* (weekly), reprints from the *Public Health Reports, Public Health Bulletins, Bulletins of the Hygienic Laboratory, Bulletins of the Yellow Fever Institute,* and the transactions of the annual conferences with State health authorities. Three hundred and sixty-four thousand copies of the various service publications were mailed during the last fiscal year.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending November 5, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
Arabia—Maskat	Sept. 25-Oct. 2	8	6
Borneo—Pamangkjat	July 22-31	20	20
Brazil—Pernambuco	Oct. 20	1	
France—Marseille	Oct. 6		1
India—Bombay	Sept. 21-Oct. 4		5
India—Calcutta	Sept. 4-17		27
India—Kurrachee	Sept. 18-Oct. 1	35	29
India—Madras	Sept. 17-30		40
India—Negapatam	Sept. 17-30		21
India—Rangoon	Sept. 18-24		1
Indo-China—Saigon	Aug. 29-Sept. 18	4	4
Italy—General	Oct. 23-30	53	24
Italy—Avellino, province	Oct. 9-15	2	1
Italy—Bari, province	Oct. 9-15	2	1
Italy—Campobano, province	Oct. 9-15	3	1
Italy—Caserta, province	Oct. 9-15	76	29
Italy—Foggia, province	Oct. 9-15	1	4
Italy—Naples	Oct. 23-24	7	3
Italy—Naples, province	Oct. 9-15	67	13
Italy—Salerno, province	Oct. 9-15	14	5
Japan—Kobe	Sept. 26-Oct. 2	58	33
Japan—Ehime	Oct. 1		Present
Japan—Hieroshima	Oct. 1		Present
Japan—Osaka	Sept. 19-24	40	
Java—Batavia	Sept. 11-17	10	6
Roumania—Tulcea	Oct. 5	1	1
Russia—Odessa	Sept. 30-Oct. 7	3	2
Russia—Riga	Oct. 8	1	
Siam—Bangkok	Aug. 14-Sept. 10	95	95
Straits Settlements—Singapore	Sept. 4-10	3	6
Tripoli—Tripoli	Oct. 4-7	3	3
Turkey—Constantinople	Sept. 27-Oct. 10	62	37
Turkey in Asia—Erzerum, vilayet	Sept. 23-Oct. 6	206	139
Turkey in Asia—Trebizond	Oct. 1-9	130	70
Yellow Fever—Foreign.			
Brazil—Manaos	Sept. 25-Oct. 1	6	6
Brazil—Para	Sept. 18-Oct. 8	39	24
Mexico—Campeche	Oct. 16-22		3
Plague—Foreign.			
Chile—Iquique	Sept. 4	1	1
Egypt—Alexandria	Sept. 7-29	5	4
Egypt—Assiout, province	Sept. 8-Oct. 6	8	2
Egypt—Galioubeeh, province	July 30-Sept. 9	1	1
Egypt—Garbieh, province	Aug. 28-Sept. 5	21	6
Egypt—Menouf, province	July 23-Oct. 3	1	1
Egypt—Minieh, province	Aug. 20-Sept. 12	3	2
Egypt—Port Said	Aug. 28-Sept. 24	2	2
India—Bombay	Sept. 21-Oct. 4		29
India—Calcutta	Sept. 4-17		13
India—Kurrachee	Sept. 18-Oct. 1	14	14
India—Rangoon	Sept. 11-24		12
Indo-China—Saigon	Aug. 19-Sept. 18	3	1
Peru—Mollendo	Sept. 7		Present
Russia—Odessa	Oct. 1-8	3	2
Siam—Bangkok	Aug. 14-Sept. 10	4	4
Smallpox—United States.			
Florida—Gadsden County	Oct. 16-22	1	
Kansas—Allen County	Aug. 1-31	2	
Kansas—Crawford County	Aug. 1-31		Present
Kansas—Decatur County	Aug. 1-31	1	
Kansas—Edwards County	Aug. 1-31	3	
Kansas—Lyon County	Aug. 1-31	2	
Kansas—Marshall County	Aug. 1-31	1	1
Kansas—Montgomery County	Aug. 1-31	1	
Kansas—Norton County		6	
Kansas—Pittsburg	Aug. 1-31	1	
Kansas—Saline County	Aug. 1-31	1	
Kansas—Wyandotte County—Kansas City	Aug. 1-31	2	
Louisiana—New Orleans	Oct. 16-22	5	
Montana—Beaverhead County	Sept. 1-30	1	
Montana—Butte	Sept. 1-30	8	
Montana—Silver Bow County	Sept. 1-30	5	
Utah—Salt Lake County	Sept. 1-30	2	
Utah—Utah County	Sept. 1-30	39	
Utah—Weber County	Sept. 1-30	1	
Smallpox—Foreign.			
Arabia—Aden	Sept. 19-26		1
Argentina—Buenos Aires	July 1-31		46
Brazil—Para	Sept. 18-Oct. 8	19	3
Brazil—Rio de Janeiro	Sept. 12-25	14	
Brazil—Santos	Aug. 3-16	1	1
Ceylon—Colombo	Sept. 11-17	1	1
Chile—Valparaiso	Sept. 11-24	80	
China—Shanghai	Sept. 19-25		1
France—Paris	Sept. 25-Oct. 1	2	
Germany—General	Oct. 9-15	1	
Gibraltar	Oct. 2-9	1	
Great Britain—West Hartlepool	Oct. 2-8	1	
India—Bombay	Sept. 22-Oct. 2		3
India—Madras	Sept. 17-30		6
Indo-China—Saigon	Aug. 28-Sept. 18	21	7
Italy—Cosenza	Aug. 30-Oct. 8	39	
Italy—Palermo	Sept. 25-Oct. 1	1	
Italy—Provaglio di Isco	Oct. 9-16	1	
Portugal—Lisbon	Sept. 25-Oct. 8	64	
Russia—Riga	Oct. 2-8	9	
Spain—Madrid	Sept. 1-30		6
Siam—Bangkok	Aug. 4-Sept. 10	1	1
Straits Settlements—Penang	Aug. 27-Sept. 3	19	4
Straits Settlements—Singapore	Sept. 4-10	22	4

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending November 2, 1910:

Bell, Charles, Acting Assistant Surgeon. Granted thirty days' leave of absence from November 26, 1910.

Cleborne, A. B., Acting Assistant Surgeon. Granted seven days' leave of absence from October 25, 1910, under paragraph 210, Service Regulations.

Creel, R. H., Passed Assistant Surgeon. Relieved from duty on United States Revenue Cutter *Tahoma* and directed to proceed to Chicago, Ill., and report to the medical officer in command for duty and assignment to quarters.

Glennan, A. H., Assistant Surgeon General. Granted thirty days' leave of absence from October 1, 1910, on account of sickness.

Houghton, M. W., Acting Assistant Surgeon. Granted five days' leave of absence from October 31, 1910.

Lavinder, C. H., Passed Assistant Surgeon. Detailed to represent the service at the annual meeting of the Ohio Valley Medical Association to be held in Evansville, Ind., November 9-10, 1910.

McLaughlin, A. J., Passed Assistant Surgeon. Detailed to attend the annual meeting of the Association of Military Surgeons to be held in Richmond, Va., November 1-4, 1910.

Naulty, C. W., Jr., Acting Assistant Surgeon. Granted one day's leave of absence, November 1, 1910.

Pettus, W. J., Assistant Surgeon General. Leave of abscence granted for one month and fifteen days from August 29, 1910, amended to read one month and five days from August 29, 1910.

Rucker, W. C., Passed Assistant Surgeon. Detailed to attend the annual meeting of the Association of Military Surgeons to be held in Richmond, Va., November 1-4, 1910.

Safford, M. V., Acting Assistant Surgeon. Granted three days' leave of absence from October 26, 1910, under paragraph 210, Service Regulations.

Stevenson, J. W., Acting Assistant Surgeon. Granted two months' leave of absence without pay from November 1, 1910.

Thurston, E. J., Pharmacist. Granted three days' leave of absence from October 24, 1910, under paragraph 210, Service Regulations.

Turnipseed, D. C., Assistant Surgeon. Relieved from duty on United States revenue cutter *Perry* and directed to proceed to San Francisco, Cal., and report to Passed Assistant Surgeon M. W. Glover for duty.

White, J. H., Surgeon. Detailed to represent the Service at the next meeting of the Southern Medical Association to be held in Nashville, Tenn., November 8-10, 1910.

Wolfe, J. A., Pharmacist. Granted one day's leave of absence October 22, 1910, under paragraph 210, Service Regulations.

Young, G. B., Surgeon. Bureau order of October 9, 1910, relative to detail to represent service at the annual meeting of Military Surgeons, revoked.

Boards Convened.

Board of medical officers convened to meet at the call of the Chairman at Port Townsend, Washington, for the purpose of conducting a physical examination of an officer of the Revenue Cutter Service. Detailed for the Board: Surgeon J. B. Stoner, chairman; Surgeon J. H. Oakley, recorder. October 26, 1910.

Board of medical officers convened to meet at the Marine Hospital, Honolulu, Hawaii, November 21, 1910, for the purpose of conducting a physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Passed Assistant Surgeon Carl Ramus, chairman; Assistant Surgeon E. R. Marshall, recorder. October 27, 1910.

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Md., November 21, 1910, for the purpose of conducting a physical examination of an officer of the Revenue Cutter Service. Detail for the Board: Surgeon W. P. McIntosh, chairman; Passed Assistant Surgeon Dunlop Moore, recorder. October 27, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 5, 1910:

Barber, John R., First Lieutenant, Medical Corps. Appointed member of the board for the study of tropical diseases as they exist in the Philippine Islands.

Bourke, James, Captain, Medical Corps. October 20th, granted thirty days' leave of absence.

Campbell, George F., Lieutenant, Medical Reserve Corps. Ordered to Army and Navy General Hospital, Hot Springs, Arkansas, for observation and treatment.

Crum, Wayne H., First Lieutenant, Medical Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., about March 5, 1911.

Cullen, Charles W., Lieutenant, Medical Reserve Corps. October 29th, leave of absence extended one month.

Davis, W. Cole, First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty on transport sailing from San Francisco, Cal., February 5, 1911.

Dougherty, James C., Lieutenant, Medical Reserve Corps. Ordered to Fort Huachuca, Arizona, for temporary duty.

Dulin, Charles T., Lieutenant, Medical Reserve Corps. Now at Army General Hospital, Fort Bayard, New Mexico. Will report to the commanding officer of that hospital for duty.

Eastman, William R., Captain, Medical Corps. Ordered to Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment.

Harris, Herbert I., Lieutenant, Medical Reserve Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., about March 5, 1911.

Hereford, John R., Lieutenant, Medical Reserve Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., February 5, 1911.

King, Charles T., First Lieutenant, Medical Corps. Ordered to the Philippine Islands for duty on transport sailing from San Francisco, Cal., on January 5, 1911.

Kramer, Floyd, First Lieutenant, Medical Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., February 5, 1911.

Leeper, John F., Lieutenant, Medical Reserve Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., about February 5, 1911.

Lowe, Thomas S., Lieutenant, Medical Reserve Corps. Ordered to Whipple Barracks, Arizona, for temporary duty.

Miller, Albert L., Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort Meade, South Dakota, to Fort Mackenzie, Wyoming, for temporary duty.

Nelson, Kent, Captain, Medical Corps. October 28th, granted leave of absence for four months.

Roberts, Ernest E., Lieutenant, Medical Reserve Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., about January 5, 1911.

Weed, Mark D., First Lieutenant, Medical Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., about January 5, 1911.

Wells, Francis M., Lieutenant, Medical Reserve Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., about March 5, 1911.

Willcox, Charles, Major, Medical Corps. Granted leave of absence for two months with permission to go beyond the seas.

Woodson, Thomas D., First Lieutenant, Medical Corps. Ordered to the Philippine Islands, for duty on transport sailing from San Francisco, Cal., February 5, 1911.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 5, 1910:

Dodge, A. H., Assistant Surgeon. Unexpired portion of sick leave revoked. Ordered to the Naval Hospital, Las Animas, Colo., for treatment.

Fauntleroy, A. M., Surgeon. Commissioned surgeon from October 8, 1910.

Minter, J. M., Passed Assistant Surgeon. Detached from the *Buffalo* and ordered to the *Monterey*.

Munson, F. M., Passed Assistant Surgeon. Detached from the *Monterey* and ordered to the *Buffalo*.

O'Malley, J. J., Assistant Surgeon. Ordered to instruction at the Naval Medical School, Washington, D. C.

Sheehan, R. F., Assistant Surgeon. Ordered to instruction at the Naval Medical School, Washington, D. C.

Smith, H. L., Passed Assistant Surgeon. Commissioned passed assistant surgeon from July 12, 1910.

Births, Marriages, and Deaths.

Married.

Boyle—Parker.—In Wakefield, Massachusetts, on Wednesday, November 2d, Dr. Harold Nickerson Boyle and Miss Mildred Parker.

Garlick—Booth.—In Wappingers Falls, New York, on Thursday, October 27th, Dr. William E. Garlick and Miss Lydia Booth.

Died.

Bowen.—In Woodstock, Connecticut, on Sunday, October 30th, Dr. George Austin Bowen, aged sixty-eight years.

Brayshaw.—In Washington, D. C., on Sunday, October 30th, Dr. J. Lacy Brayshaw.

Carter.—At Saranac Lake, New York, on Wednesday, November 2d, Dr. Norman McLeod Carter, aged thirty-four years.

Curran.—In Brooklyn, New York, on Tuesday, November 1st, Dr. Charles B. Curran, aged thirty-eight years.

Davis.—In St. Michaels, Maryland, on Thursday, October 27th, Dr. J. C. D. Davis, aged fifty-five years.

Delabarre.—In White Plains, New York, on Sunday, October 30th, Dr. Walter Edward Delabarre, aged fifty-two years.

Dewey.—In Brooklyn, New York, on Tuesday, November 1st, Dr. George Asbury Dewey, aged eighty-two years.

Douglas.—In Utica, New York, on Saturday, October 29th, Dr. E. H. Douglas, aged forty-three years.

Eckel.—In Washington, D. C., on Thursday, October 27th, Dr. Peter Judson Eckel.

Fanning.—In Stamford, Connecticut, on Friday, November 4th, Dr. William Coit Fanning, aged seventy-one years.

Friend.—In Milwaukee, Wisconsin, on Sunday, October 30th, Dr. S. H. Friend, aged forty-eight years.

Hamill.—In Chatham, New Jersey, on Saturday, October 29th, Dr. Edward H. Hamill, aged sixty-five years.

Kimball.—In Lakewood, New Jersey, on Thursday, November 3d, Dr. Paul T. Kimball, aged forty-eight years.

Krieger.—In Paris, Illinois, on Sunday, October 23d, Dr. Lewis William Krieger, aged fifty-two years.

Law.—In Springfield, Illinois, on Saturday, October 22d, Dr. Shelton Law, aged thirty-five years.

McCune.—In Plain City, Ohio, on Monday, October 31st, Dr. J. E. McCune, aged eighty-five years.

Neptune.—In Caldwell, Ohio, on Friday, October 21st, Dr. F. O. Neptune, aged fifty-eight years.

Nichols.—In Troy, New York, on Friday, October 28th, Dr. William H. Nichols, aged sixty years.

Robbins.—In Portsmouth, Virginia, on Wednesday, October 26th, Dr. Charles W. Robbins.

Searle.—In Brooklyn, New York, on Sunday, October 30th, Dr. William S. Searle, aged seventy-seven years.

Wright.—In Bowling Green, Kentucky, on Saturday, October 29th, Dr. A. C. Wright, aged seventy-three years.

New York Medical Journal
INCORPORATING THE
Philadelphia Medical Journal and The Medical News
A Weekly Review of Medicine, Established 1843.

Vol. XCII. No. 21. NEW YORK, NOVEMBER 19, 1910. Whole No. 1668.

Original Communications.

A SERIES OF STUDIES OF NERVOUS AFFECTIONS IN RELATION TO THE ADJUSTMENTS OF THE EYES.

By George T. Stevens, M. D., Ph. D.,
New York.

(*Second Study.*)

A Case of Epilepsy.

In the study of any form of disease it is an accepted principle that the student should know, at least in a general way, what is the character of the affection which is to engage his attention.

Epilepsy is a term which has been applied to several forms of paroxysmal disorders of the nervous centres in which the motor system and the consciousness, one or both, are subject to important disturbances. Recurring paroxysms of bodily convulsions with loss of consciousness is the more ordinarily recognized form but phenomena of widely different characters are also included in the term.

In the more generally recognized form the attacks of which are known as *grand mal* and in which convulsive movements of the body are associated with loss of consciousness, the use of the term epilepsy does not appear to be questioned notwithstanding the fact that when the phenomena of the affection and especially the pathology of different cases of this general form of disturbance are closely examined, we seem to be occupied, not with a single affection but with more than one.

That every case characterized by a sudden loss of consciousness with marked disturbance of motility should be classed with every other case as the manifestations of a single malady, irrespective of any inquiry into the physical or pathological underlying conditions would appear to be by far a too general classification.

We do not reckon five cases of scarlatina and four cases of measles as nine cases of either, yet these two disorders differ no more, indeed differ less than do some of the forms of what we term epilepsy.

A case of so called epilepsy may exhibit striking and evidently long existing gross pathological lesions within the cranium and another case may show either no lesion or such superficial pathological changes as should be accounted for by the long continued and oft repeated seizures, yet these two cases are regarded as examples of the same disease.

In a case under my own observation there was found, post mortem, in the frontal lobe of the right cerebral hemisphere, an extremely hard, glistening, oval, bony substance of the size of a butternut; in another a large tumor occupying the posterior portion of one of the hemispheres; in another a large gumma. These are a few of the pathological changes which might be mentioned but I need only refer thus briefly to such conditions since it is by all conceded that with certain cases of "epilepsy" are found growths of various characters and degenerative conditions within the cranium.

Could all these changes be reasonably regarded as sequelæ of the oft recurring paroxysms the fact of their existence need not lead to a distinction between the cases with old lesions and those with no lesions. But when we consider that some of these forms of changes are of specific origin, certainly not the direct results of the crises and that others can with no more reason be attributed to the epileptic attacks, the facts would not appear to justify the view that such important and old lesions do not constitute an original cause of the epileptic paroxysms, but are simply and only coexisting features in cases which would, in the absence of these gross lesions, still be epileptic.

Until, therefore, we distinguish between the various forms of diseases now so conveniently, but so unfortunately, arranged under the inclusive term "epilepsy" our study of any of the forms of the malady now included in this term is at a serious disadvantage.

It may, indeed must, be conceded that it is often difficult to distinguish between different forms of the group of affections in question from the behavior of the patient either while in an attack or during the interval. A patient may have a series of moderately severe attacks in which no phenomena are manifest which would, in the present state of our knowledge, distinguish one form from another, yet in a subsequent severe attack or series of attacks conspicuous evidence of organic lesion may be observed.

That there is much to be done in the direction of diagnosis is a fact which should be regarded as of prime importance. The large colonies of epileptics gathered and supported by States should furnish material for extensive and much needed research in this direction.

In the present study I propose to confine myself to the form characterized by general convulsions with loss of consciousness, accompanied or not by minor attacks such as go under the name of *petit mal,* in which there are no evidences of gross cerebral lesion.

Many years ago I was led to believe that this form of epilepsy very often, indeed usually, results

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from anomalous adjustments of the eyes. During all the years which have passed I have seen no reason to relinquish the view then announced but quite on the contrary I am sure that the view has been confirmed.

No one can better realize than do I the prevailing scepticism with which this view has been received on the one hand, and on the other hand, of the ill considered and worse executed efforts of impetuous individuals who, ready to adopt new methods, are quite unwilling to accept the great trouble of suitable preparation for the proper understanding of so difficult a subject.

The amusing, were it not disheartening, spectacle of gentlemen passing through a colony of epileptics in the expectation of proving or of disproving any scientific proposition concerning epilepsy, its nature, and its treatment, by a general distribution of eyeglasses to the victims of ancient brain tumors and of other forms of cerebral degeneration, may be quite satisfactory to the actors in the comedy but the performance can hardly be regarded as important. In spite of the legitimate results of such a movement, epileptics—real epileptics—often get well when the eyes are intelligently treated.

That, in the earlier stages of the investigation, I was quite unable in very many cases, in fact in a good proportion of cases, to determine correctly the character of the anomaly of adjustment, was the natural sequence of the state of knowledge of certain very important subjects in the domain of physiological optics at that time. That I have, perhaps, from year to year, been able to bring to bear a better understanding of these subjects and thus have been enabled to look with clearer vision into this class of causes and to better comprehend not only their nature but their relation to the malady, has been only the legitimate result of hard, persistent, painstaking labor, directed in important measure to the correction of my own mistakes and failures and influenced largely by the confidence established and maintained by a conservative but reasonable regard for scientific evidence.

As, in the former paper of this series, I selected a single case to illustrate my view and general methods of inquiry and of surgical procedure, so in this study I shall also select a single illustrative case, having in view several reasons for this selection.

Of these reasons, the first is that the history and treatment of the case illustrate the positive relation between the eye adjustments and a confirmed, long continued, and unusually bad case of epilepsy. A second reason is, perhaps, one of sentiment. It was this case which led me to an appreciation of certain forms of anomalies of adjustments of the eyes to which my attention had not before been directed and which led to the completion of a tropometer for the measurements of the rotations of the eyes, measurements which had not before been correctly made. A third reason is that while the diagnosis of this case was correct and the treatment eminently satisfactory, I propose to show that that very treatment is now inadvisable since for it can be substituted methods involving less risk and which assure equally good or even, in most cases, better results. My illustration is:

A Case of Idiopathic Epilepsy. Miss A. B., thirty-three years of age, consulted me, by the advice of Dr. H. Seymour Houghton, November 14, 1894. The patient had been an epileptic five years with pretty regularly returning groups of attacks of a most violent character.

From childhood she had been a victim of migraine and had, at an early age, been forced to abandon school because of the frequent and severe attacks of this malady. While yet a young girl, she was habitually subject to dyspeptic conditions characterized by much pain and eructations of gas. Three years before the regular occurrence of the epileptic attacks she had suffered from recurring chills and fever and was in general an invalid.

During the five years preceding her visit to me, the epileptic attacks had occurred usually in groups. On an average she had had a series of seizures once a month and more frequently than otherwise, at the menstrual period. As a rule, when she entered upon the series of attacks, one followed another in so close succession that she rarely regained consciousness between the many succeeding attacks. The series lasted from one to two days or even longer, the convulsions intermitting from time to time, but returning before the patient regained control of herself, even before she could fall into profound sleep which always terminated the series. She bit the tongue and cheeks unless precautions were taken against it and often threw up blood when consciousness finally began to return. The series of attacks usually commenced during the night and was followed by a profound sleep and afterward, on awakening, by a violent headache. Frequently after one of these series of attacks her memory for events within a few days or even weeks previous to the series was lost.

The patient's father was subject to delusions during ten or fifteen years previous to his death, which was from Bright's disease, at the age of sixty-seven. He had a sister who was also subject to delusions. Miss B's mother was subject to "fainting spells" which occurred about once a week pretty regularly for about three years. These "spells" commenced at the period of the menopause.

The patient had taken bromides for years. She was demented to a pronounced extent. Her sister, who accompanied her, spoke for her, as she seemed incapable of answering my questions.

A careful physical examination and a detailed inquiry into her history did not suggest any definite cause for the attacks. A patient examination of the condition of the eyes, as I understood those conditions, did not reveal any very important error of refraction or anomaly of heterophoria. The examination was renewed on the day following the first and again on the third day.

Finding no anomalous conditions of the eyes I was about to write a report to this effect to the physician who had sent the patient to me when my attention was more especially drawn to the peculiar and extreme position of her head which was thrown backward, with the chin correspondingly elevated. The pose had been observed from the first but had not been associated in any way with the state of her eyes or with her general condition. As my attention was now more particularly directed to it, it became evident that the pose of the head, which was the ordinary and habitual one, was in relation to the adjustment of the eyes. The more I contemplated the figure before me the more strongly this suggestion was impressed upon my mind.[1]

Making such tests as I was able, by perimeter and by what seemed then even much better, by close observation without the aid of any instrument and by comparing with other persons who appeared to have normally adjusted eyes, the suggestion was strongly confirmed that there was a restricted upward rotation and an excessive rotation downward.

On the 21st of November, after a week of careful observation, a photograph was taken to show the habitual pose, no suggestion being made which would influence her, the result being a correct representation of the habitual position of the head. The drawing, Fig. I, I have made with care to preserve the outlines as nearly as possible.

On the same day I determined to elevate the direction of the line of sight of one eye, thinking that, should the result prove satisfactory, a similar operation would follow on the other eye.

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[1] The prevailing fashion in pictures of actresses, so abundantly exhibited in the daily newspapers, in which the chins are elevated high in the air does not necessarily prove that the women are all nearly so silly as they appear. The imbecility is often to be attributed to the manager or to the photographer.

A very careful relaxation of the inferior rectus of the left eye was done, great caution being observed to maintain unimpaired the external and internal fibres of the tendon and leaving more of the latter intact than of the former. The effect of the relaxation as shown on the next day was a left hyperphoria of 7°.

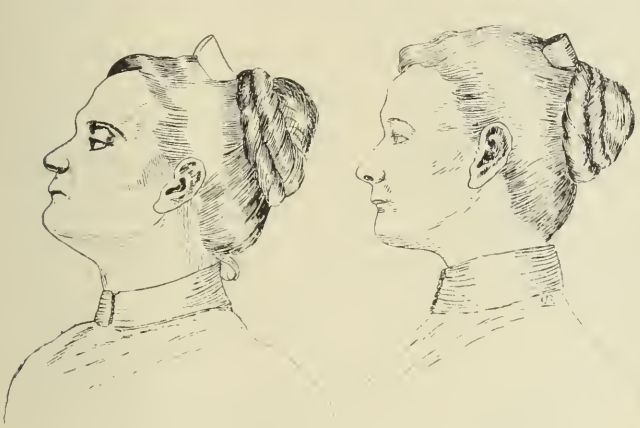
Two days after the first operation a similar relaxation of the inferior rectus of the right eye was done, great care being, as before, observed in maintaining intact a rather strong fasciculus of fibres at the inner border of the tendon with a more slender one at the external border. The result on the following day was no hyperphoria.

According to my custom all drugs had been discontinued

I have dwelt on the details of these two operations because I was accomplishing more and doing better than I knew. My purpose was to avoid any possible tilting of the eye outward in the act of looking down. As a matter of fact I undoubtedly tilted the upper end of the vertical meridian of each eye in, thereby correcting a condition of which I had no knowledge at the time, a positive declination of each eye.

The records for November 24th, 26th, 29th all indicate that the patient was much less nervous than before, that she was sleeping much better and was mentally improved. December 11th, the record reads:

"Has been at home since last record. *Has passed her menstrual period with no trouble whatever. Holds her head in normal position with no protrusion of the chin.*"



Habitual pose,
Fig. 1.—before and Fig. 2,—during treatment.

On December 15th a second photograph was taken, also without suggestion to her as to the pose she should assume. The drawing, Fig. 2, shows the habitual position of the head at that time.

Record, December 28th: "Has been very well. Continues to sleep better than she has for years and says that she is no longer nervous." Hyperphoria=0; esophoria=2°; V.=6/5 with cylinder—1.00, 180°. Ophthalmometer 1½ D. astg. at 90°. (This record of refraction corresponds with that of November 14th.)

Record, January 15, 1895: "Has been at home since December 29th. Has passed the second menstrual period without trouble. No convulsions and *no headache.*" A few days after the close of the period she had a "sick headache" and *one momentary convulsion,* the unconsciousness being barely noticeable to her friends.

Record, January 18th: "Vision 6/6+ each eye, *rejects cylinder and all glasses.*" This was not the first time that I had observed a marked modification of or disappearance of astigmatism as a result of relaxation of excessive muscular tension.

Again, the record for February 15th: "Another menstrual period passed without attacks." But on April 17th the record reads: "Had a single very slight attack in last week of February and a week later, during menstruation, had three slight nocturnal attacks."

In July she had a series of slight attacks. As I was now able to measure the rotations of the eyes accurately, the tropometer being now available, and finding that the upward rotation was still restricted, a slight additional relaxation of each inferior rectus was done about this time and in November the rotations were, up 35°, down 45°.

From this time on there were no further attacks up to November, 1895, when I lost sight of the patient. I did not see nor hear from her again until May 6, 1907, an interval of twelve years. She then called because she thought she needed glasses as she was having headache. She informed me that during the twelve years she had been absolutely free from any attacks, had been in excellent health, able to perform any ordinary duties. For six years past she had worked in a factory at a sewing machine ten hours a day, six days in the week, and had not lost a day during that time from any kind of illness. Her mental condition was perfectly normal, no traces of the former dementia. The conditions of the eyes were as follows: V. 6/6 each, right without a glass, left with Cyl.+.50, ax. 90°. Reads with sph.+1.75. Esophoria and exophoria 0°; right hyperphoria 1°; *declination,* right +1°, left+2°; rotation up, each 38°, down, each 40°.

It is unnecessary to follow this history further than to say that up to the date of writing this there has been no return of the old malady. Some treatment was directed to the remaining declinations and glasses have been prescribed from time to time. Her health continues excellent.

It has already been said that one reason for the selection of this case as an illustrative one was the fact that it led to an earnest consideration of the rotative conditions of the eyes.

I had no sooner operated in this case than the necessity for an exact method for determining the precise rotating powers of the eyes became imperative. I had already made some tentative experiments in that direction but only with physiological investigation in view. It was now evident that a practical method for such examinations should be adopted. A series of experiments resulted in the completion of the tropometer which in a few months became a practical instrument and led to still further interesting researches respecting the pose of the body as well as the relations of the adjustments of the eyes to the form of the cranium.

Another thought is prominent in the history of this case. The relaxation of the inferior recti was followed by most satisfactory results. Should not, therefore, such a procedure be regarded as an excellent one to pursue in other suitable cases? It is partly that I might answer this question with an emphatic negative that I have made the selection of this case.

It was most fortunate that no unfavorable result followed these relaxations and I have done many such without unfortunate results, but experience has taught that it is much safer to leave the tendons of the inferior recti intact. A result equivalent to a relaxation of the inferior recti may be obtained by contracting the superior, a procedure which is much safer. Again, a larger experience has suggested that, undoubtedly, the favorable result in this case was not arrived at in the exact manner that I then supposed. In the relaxation I had observed great care to preserve a stronger fasciculus of fibres at the inner border of the tendons than at the outer. In this there was no thought of correcting a declination, yet it is now plain that had there not been a high degree of positive declination I would have created by such a procedure a negative one for each eye. As a matter of fact when, later, attention was directed to this, there remained a decided positive declination for each eye. I now think that the result was very largely due to the unintentional reduction of this condition. A large experience has led to the conclusion that the condition of declination is a most important element in the causation of epilepsy.

Coming now to a general consideration of this case we cannot fail to recognize the relation between the means taken and the result obtained. Had the surgeon having charge of the case regarded only the refractive condition or the slight degree of heterophoria the result would have been, of course, a failure. It does not follow that because an ophthalmologist who confines his thoughts to a few long recognized factors in the adjustments of the eyes, rejecting more recent observations from choice, has failed to find the reason for epileptic seizures in the adjustments of the eyes, that a more intelligent search might not reveal an important connection between the conditions of the eyes and those of the nervous centres.

My later experience has led me to believe that idiopathic epilepsy is, in a great proportion of cases, the result of the conditions of tilting of the meridians of the eyes which I have called *declinations* and for some years past my efforts toward relief to these cases have been directed toward the correction of this defect. Although such a correction is sometimes extremely difficult and demands much patience and infinite care the results have been on the whole most satisfactory.

22 EAST FORTY-SIXTH STREET.

PATHOGENESIS OF THE TOE PHENOMENON.*

By ALFRED GORDON, M. D.,
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(*From the Pathological Laboratory of Mount Sinai Hospital.*)

The problem of cutaneous and tendon reflexes is one of the most perplexing. That there is a total independence between these kinds of physiological reaction is apparently well established. Numerous clinical observations prove, generally speaking, that cutaneous reflexes may disappear in organic affections in which the pyramidal tracts are involved, while the tendon reflexes are not only present but exaggerated. Van Gehuchten and Jendrassik, among a few others (International Congress of Medicine, 1900), had demonstrated that the red nucleus is a very important reflex centre. They showed that the upper centres react upon the motor cells of the anterior cornua of the cord through two different pathways, the corticospinal and the rubrospinal. These two tracts descend in the lateral columns of the cord where they are formed of crossed fibres. In ataxic paraplegia, in spastic paraplegia due to a compression of the cord, there is an interruption of the corticospinal fibres and a relative integrity of the rubrospinal fibres. In these two pathological conditions an increase of tendon reflexes and a loss of cutaneous reflexes are observed. The cutaneous reflexes, such as abdominal or cremasteric, are associated therefore with the integrity of the corticospinal tract and the tendon reflexes with the rubrospinal tract. The first have a cortical, the second a mesencephalic origin.

When in the same pathological conditions as just mentioned the sole of the foot is being irritated, the plantar reflex, which is also a cutaneous reflex, instead of being absent like the other cutaneous reflexes, assumes an entirely different picture—extension of the great toe takes place. Babinski and with him Van Gehuchten, Marinesco, and others do not consider it as a modification of the plantar reflex. To them the latter disappeared like the other cutaneous reflexes, and to them the extension of the toe is an entirely new phenomenon. It may be produced not only by irritation of the sole of the foot but also by other methods such as by Oppenheim's and Gordon's. On the other hand, the toe phenomenon cannot be placed in the same category as tendon reflexes, as in a certain group of cases there is a distinct dissociation of these two phenomena. In compression of the cord, for example, there may be complete absence of tendon reflexes and presence of extension of the great toe. There are also cases in which the toe phenomenon may be absent and the tendon reflexes present.

It is acceded, I believe, by all that the toe phenomenon is a cutaneous reflex, but the origin of it is still debatable. Some believe in the cerebral nature of the toe phenomenon, others believe that its origin lies in the spinal cord. In a series of twenty observations made by Marinesco on patients in whom the intracerebral or intraspinal pyramidal tracts were involved, patients whom he anæsthetized with chloroform, the toe phenomenon disappeared mostly before the other cutaneous reflexes, while the abnormal tendon reflexes such as increased knee jerk and Achilles tendon reflex and ankle clonus persisted. It seems that this sign is the most sensitive of all cutaneous reflexes, it disappears even before the corneal reflex. The same observation was also made by Laureys (*Journal de neurologie,* 1901, p. 469) in twenty cases submitted to the effect of chloroform.

That cerebral influence plays an important rôle in the mechanism of the toe phenomenon can also be seen from the fact that it appears sometimes very precociously, a few hours and even immediately after a cerebral lesion in which the pyamidal tract is involved, but not yet degenerated. This is especially and most frequently observed not with Babinski's, Schaefer's, or Oppenheim's method but by the writer's method. (*Journal of Nervous and Mental Disease,* 1906, No. 6.) No degeneration of the pyramidal tract has yet developed, but there is an interference with the function of this tract. A suspension of cerebral influence on the spinal cord is here evident.

The most important evidence in favor of an encephalic origin of the toe phenomenon lies in its absence in complete transverse lesions of the cord at the level of the cervical or dorsal segments. In these cases the toe phenomenon should be present, if its origin lies in the spinal cord. Its absence therefore in compression of the cord which leads to conditions analogous to transverse sections militates against the spinal view of the reflex. Marinesco (*loco cit.*), Crocq (*Congrès des aliénistes et neurologistes de France,* etc., 1901) bring forward ample proofs of this contention. What is important from the point of view of the subject in question is the fact that during the evolution of the compression of the cervicodorsal cord a gradual disappearance of all the cutaneous sensibilities and of cutaneous reflexes can be witnessed.

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*Prepared for the meeting of the American Medical Association, Section in Nervous Disease, June, 1910.

The case which I had the opportunity to study from the clinical and anatomical standpoints and the details of which are given below is, I believe, of value from the point of view of the pathogenesis of the toe phenomenon. It is a case of Pott's disease with a prominence at the level of the fifth dorsal vertebra. When the patient came under my observation, he presented in addition to total sensory losses also absence of the toe phenomenon, of abdominal and cremasteric reflexes, but the abnormal tendon reflexes, viz.: exaggerated knee jerks and Achilles tendon reflex, also ankle clonus, were present. There was a slight rigidity of the lower limbs. Microscopical examination showed a marked descending degeneration of the pyramidal tracts on both sides. According to the generally accepted view the toe phenomenon is associated with a degenerative state of the motor pathway. This is not altogether correct. The before mentioned finding of the toe phenomenon immediately or shortly after the onset of hemiplegia speaks in favor of the view that only a functional disorder of the motor tract beginning from the cortex and ending down in the spinal cord is sufficient to cause the toe phenomenon. Besides, there are observations in the literature, such as Marinesco's for example (*loco cit.*), in which compression of the pyramidal tracts without the least degeneration of its fibres resulted clinically in the production of the phenomenon.

Any involvement of cerebrospinal motor pathway is therefore expressed in the toe phenomenon. But whether the latter is a spinal or encephalic reflex, this must be decided in favor of the latter in view of the previously mentioned Marinesco's and others' observations with hemiplegics and paraplegics under chloroform, in view of the appearance of the reflex shortly after the onset of hemiplegia, finally and mainly in view of its absence in cases of total compression of the cord which means total suppression of encephalic influence on the spinal cord which contains a centre for the extensors of the toes.

The case I am reporting is a most convincing example, in my judgment, of the encephalic pathogenesis of the toe phenomenon, first described by Babinski. The case is as follows:

CASE. D. P., colored, aged fifty-eight, janitor by occupation, was admitted to the Douglass Hospital on September 13, 1909, with the following history: About two years ago he began to feel a numbness and coldness in his right foot. The numbness gradually ascended to the knee. Two weeks later the left side became similarly affected. Shortly afterwards pain appeared in the lower half of his spine. The pain was not sharp, but dull and radiated around the waist. Gradually a weakness developed in his lower extremities, which progressively increased until about three months ago when he found that he was unable to get up. At that time he began to suffer from retention of urine. About three weeks ago incontinence of urine and fæces made its appearance.

Upon his admission he complained of a stiffness in his back, of a numbness and burning in his legs. He was unable to raise his limbs off the bed; the legs were somewhat spastic and were occasionally seized with involuntary spasmodic movements. The patellar tendon reflexes were markedly increased on both sides, ankle clonus was present on both sides, but the toe phenomenon was totally absent on both sides whether tested by Babinski's, Oppenheim's, or Gordon's method. The cremasteric and lower ab-

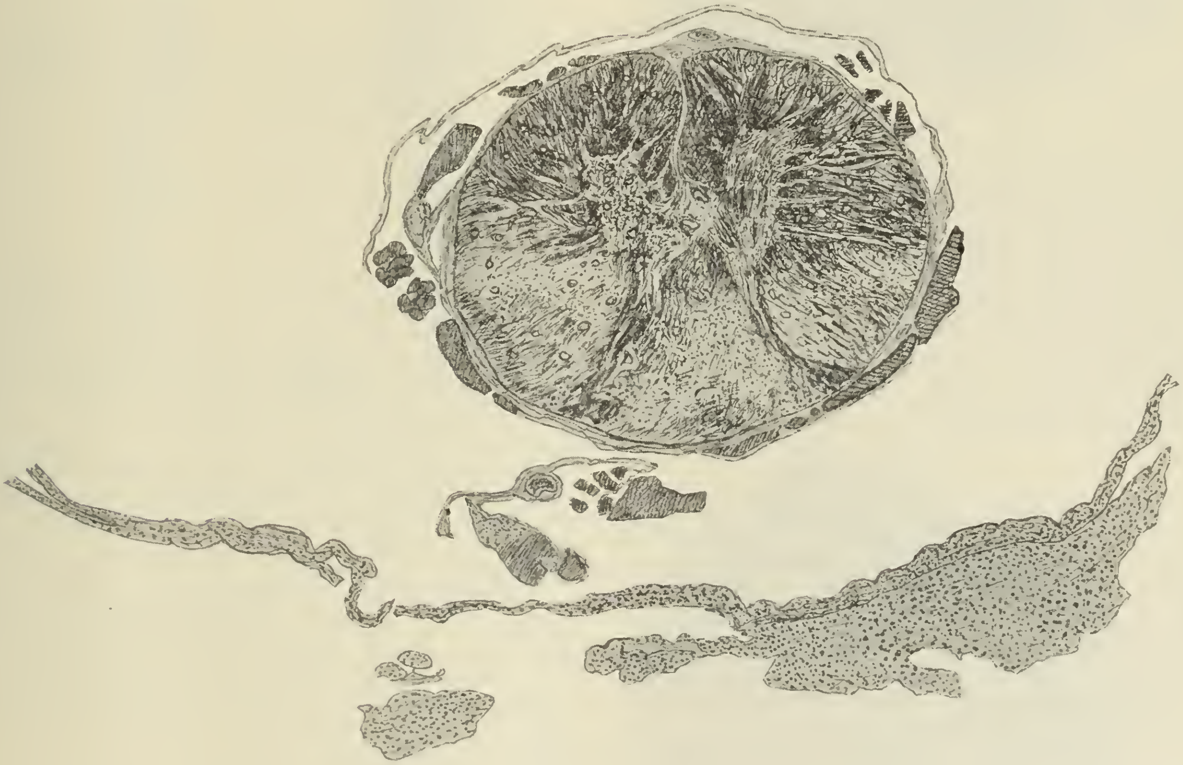

FIG. 1.—Section immediately above the depressed area, showing diffuse degeneration in the white and gray matter.

dominal reflexes were absent on both sides. Sensations to all forms (touch, temperature, and pain) were entirely abolished in both lower extremities, also on the abdomen as far as four finger breadths above the umbilicus line and on the back at the same level. The sphincters were much involved; there was incontinence of both urine and fæces. The patient had three bed sores, two on his trochanters and one in the middle of the sacral region. The eye examination showed no special changes in the right fundus, but the left fundus was not seen on account of opacities in the cornea. Traces of an old iritis were seen in the right eye.

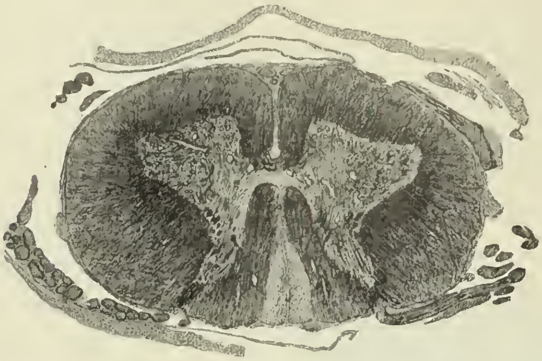

FIG. 2.—Cervical segment, showing degeneration of the posterior columns.

Further examination of the patient showed a prominence of the fifth dorsal vertebra which upon investigation became particularly protruding about three months before admission. The patient had a slight cough and his temperature while in the hospital presented a slight ascension in the morning (99.5° F.) and in the evening (101° F.). The sputum did not contain tubercle bacilli. There was a slight dulness on percussion over the apex of the left lung, but no râles could be heard on respiration. The heart was normal. Urinary analysis gave negative results. The family history did not elicit anything special worth mentioning.

The diagnosis was Pott's disease with secondary transverse myelitis. The patient died two weeks after admission.

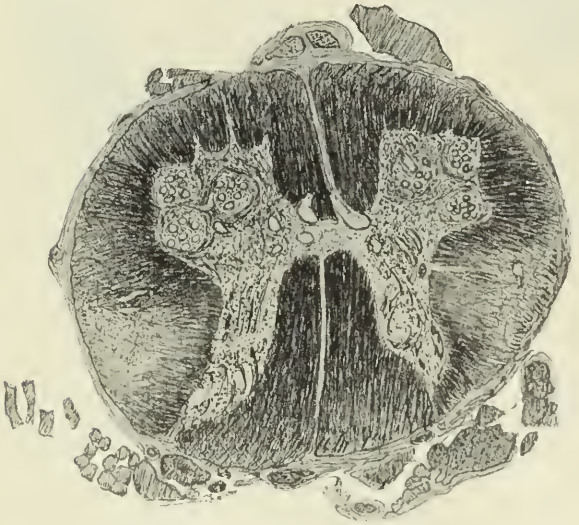

FIG. 3.—Lumbar segment, showing degeneration in the lateral columns.

Permission was obtained only for removal of the spinal cord, which was done by Dr. R. W. Bailey and Dr. G. Diu Guid.

When the spinal canal was opened, a large amount of cerebrospinal fluid creamy in color escaped. At the level corresponding to the vertebral prominence the spinal cord presented a deep depression, with almost complete severance of the cord tissue. Indeed it could be seen that the two faces (anterior and posterior) of the dura were closely applied to each other at the level of this depression. Beginning from this point down at a distance of two inches the cord was exceedingly pale and the contrast in color of this portion of the cord and the portions above and below was striking. The latter two were somewhat congested. The dura surrounding the pale portion also slightly above or below it was markedly thickened.

The spinal cord was hardened and prepared in the usual manner. Cells were studied with thionin and ammonia carmin methods, tracts with Marchi and Weigert methods. As can be seen from the illustrations, the most changes were observed immediately beneath the before mentioned deep depression which divided the cord into two halves. The most marked degenerative changes were confined to the posterior and lateral tracts, but the condition was rather diffuse, through the entire section, one cornu was almost entirely deprived of cells. The meninges around this segment were markedly thickened. Descending degeneration in the pyramidal tracts were seen below this segment and ascending degeneration above it in the posterior columns.

1430 PINE STREET.

EXTRAMEDULLARY SPINAL CORD GLIOMA,

With Successful Operation and Complete Recovery.

By DAVID INGLIS, M. D.,
Detroit, Mich.;
THEOPHIL KLINGMAN, M. D.,
Ann Arbor, Mich.; and
MAX BALLIN, M. D.,
Detroit, Mich.

From a morphological and pathological standpoint the title of this paper might be regarded as incorrect, but the tumor in question was entirely extramedullary with but a small pedicular attachment to the subpial neuroglia mantle of the cord and the seventh thoracic posterior nerve root, which proved, microscopically, to be a true glioma (see Figs. 4 and 5). The early and seemingly complete restoration of function in the cord after removal of the tumor establishes at least the physiological integrity of the cord.

Tumors of the spinal cord and its membrane are, generally speaking, of infrequent occurrence. The statistics of the Vienna Pathological Institute show that of all tumors occurring in the body only two per cent. are spinal cord tumors, and in only 0.5 per cent. of the cases of tumors occurring anywhere in the body is the spinal cord affected either primarily or secondarily.

In about one half of the cases of intradural spinal tumors, the spinal cord remains indefinitely free from infiltration. Frequently, although closely attached to the nerve roots, the nerve roots themselves are not infiltrated nor their function destroyed.

Glioma, which is comparatively common in the brain, occurred only sixteen times in 125 cases of spinal cord tumors. Glioma of the spinal cord is not to be confounded with gliomatosis. A glioma is usually described as an infiltrating tumor of the cord tissue not sharply defined or encapsulated, but causing a morbid enlargement of one or two spinal segments. The cases recorded are all intramedullary and consequently the most malignant of all spinal tumors.

The following case adds not only one more to the recorded instances of successful removal of a spinal tumor but, as far as the authors have been able to find in the literature the first extramedullary spinal glioma recorded and the first operable case of spinal glioma, with apparently complete recovery.

The patient, Mr. A. B. C., was referred to Dr. David Inglis by Dr. Weaver, of Charlotte, Michigan.

Dr. Inglis examined the patient on October 31, 1908, and made the following notes.

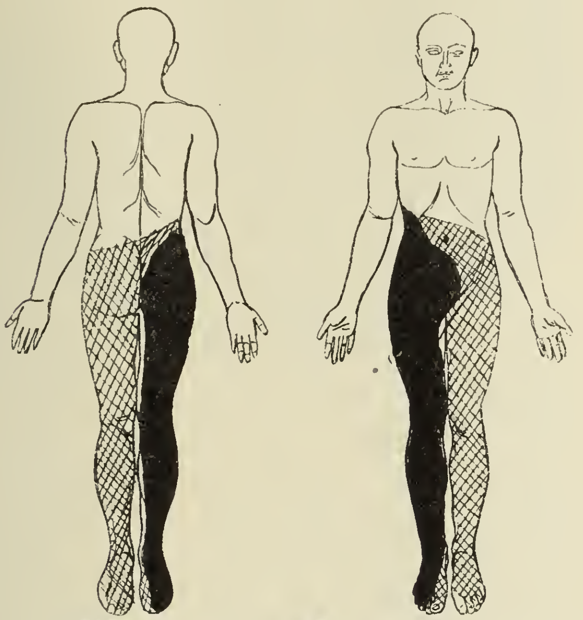

FIG. 1.—▨ Hyperæsthesia. ■ Anæsthesia, analgesia, and absence of temperature sense.

Age, forty-two, druggist, married sixteen years, three children, used alcoholics frequently although not excessively, used tobacco to excess. No history of lues. In February, 1907, he felt a pain in the region about the apex of the heart corresponding to the left seventh intercostal nerve. This only came on when he had been lying in bed three or four hours and was promptly relieved by getting up and moving about. After two months' duration this pain ceased entirely, but returned again eleven months later (March, 1908), location and character the same. His general health was excellent. About this time he consulted Dr. George Dock, of Ann Arbor, on account of the pain in the cardiac region. A skiagraph was taken at this time. The result of this examination was negative and the patient was found to be in good physical condition. In July of the same year the pain became more continuous and occurred while the patient was in the erect position and was not relieved by change of position. He was inclined to bend the trunk forward. He further noticed that on bending forward or sneezing or coughing hard, or by any sudden jar of the trunk, he felt a tingling which flashed from the middle of his body down both legs to his feet. Within a week or two he began to have numbness in the legs, not extending above the knees. This numbness gradually increased until it extended up both thighs to above the buttocks. Corresponding with this sensory and motor impairment, an ataxia was present. By October, 1908, his general health was failing. He had lost twenty pounds in weight. On one occasion the pain extended to a corresponding area on the right side. This was during a very severe paroxysm of pain on the left side. The pain was most intense, causing profuse cold perspiration and was only relieved by a hypodermic injection of morphine.

Dr. Inglis arrived at the conclusion that the patient was suffering from a tumor of the spinal cord which primarily irritated one intercostal nerve; it was definitely and permanently located. Change of attitude altered the pressure on the nerve. As it became larger it reached a point at which the pressure on the intercostal nerve was constant. Changes of posture failed to relieve the pain. Then it began to impinge upon the cord causing the "flash of tingling in the trunk and legs." As the pressure increased, there came impairment of sensation and motion, signifying the beginning of a pressure myelitis. The reflexes corresponded with this and the diagnosis of an intradural spinal tumor seemed certain enough and immediate operation was advised. At the suggestion of Dr. Inglis, the patient went to Ann Arbor, where Dr. Theophil Klingmann saw him as a private patient on November 10, 1908. Dr. Klingmann knew nothing of Dr. Inglis's findings or his conclusions. At this examination the following notes were made:

The patient walked with a cane and complained of gradual loss of power in the lower extremities, which he stated began in the left leg. He also complained of numbness in both lower extremities, somewhat more in the left. His gait was slow and deliberate, dragging the toes of the left foot. The left foot was carried forward with some ataxia and raised well from the floor, bringing it down heel first.

Family history: Mother died of pulmonary tuberculosis. Otherwise the family history was negative.

Personal history: The patient had never had any serious illness until the present trouble came. He was an excessive smoker and had used intoxicating liquors very freely for several years. He denied venereal disease. There was no history of syphilis. He was a druggist and had worked at this occupation for many years. Had been married sixteen years and had three healthy children.

Present illness: About the beginning of February, 1907, he was taken with a pain which he located definitely in the vertical mammary line in the seventh intercostal space. The pain occurred at first only when he was in the dorsal position for three or four hours, and was relieved when in the erect posture. At the beginning the pain was of a dull character, later it became more severe and sharp and about two months after the onset it disappeared entirely, but reoccurred eleven months later (March, 1908) with the same characteristics. About the first week in July, 1908, the pain also occurred when in the erect posture and change of position gave no relief. He was inclined to avoid sudden movements of the body, was slightly stooped, and the trunk was inclined to the left side. Jarring of the body, as in coughing, sneezing, laughing heartily, etc., produced a sensation of an electric shock in the lower extremities, and about two weeks later he had a decided numbness in the legs. This numbness gradually extended upward until it reached a line immediately above the hips. Soon after the numbness in the legs appeared he perceived a motor weakness in the left leg, and a little later he had some difficulty in voiding urine.

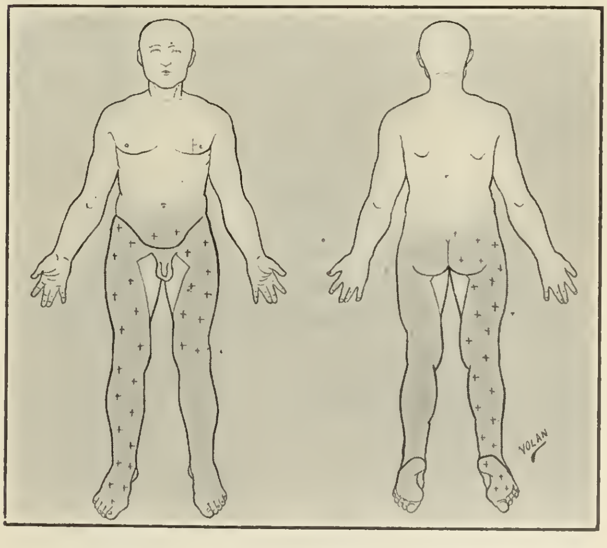

FIG. 2.—Shaded area indicates anæsthesia and analgesia. + Lost temperature sense. -◆- Neuralgic spot.

This condition of things steadily progressed for the worse, finally motor disturbances occurred in the right leg and the disturbance of the left leg became more pronounced. He began to drag the left foot and found he could not control the movements of his left leg. On arising in the morning there was considerable "stiffness" and "trembling" of the left lower extremity. His arms were entirely free from any disturbances and were as strong as usual, although his general health was failing and he was losing weight.

Physical examination: The patient's general appearance was good. Color of mucous membranes good. No jaundice. No facial asymmetry. Teeth good and regularly placed. No enlarged glands on the neck. The thorax was symmetrical and well developed. Heart and lungs negative. No arteriosclerosis. Pulse regular and of good volume, 72 per minute; temperature, 98.8° F.

Neurological examination: There was nothing peculiar about the head and face. He felt light touch equally well on both sides of the face. Conjunctivæ not anæsthetic. The palpebral fissures were equal. The pupils were equal, central, and regular, and reacted to direct and consensual light stimulation normally. The extraocular muscles were not disturbed. Vision appeared normal and ophthalmoscopic examination was negative. There was no facial palsy. The tongue was protruded straight. No tremor or atrophy of the tongue. The muscles of the arms were well developed and the grip was good in both hands. No difficulty in moving the arms. No tremor or incoordination of the hands and no disturbance of sensation in the upper extremities. The elbow jerks were equal and normal. Over the thorax and upper part of the back there were no sensory disturbances. The spine was straight and not tender on pressure. No tender points about the thorax. The patient had pain, which he located in the seventh intercostal space bisected by the vertical mammary line. There was no tenderness on pressure at this point. The trunk was bent slightly forward and to the left. There was complete loss of sensation to touch and pain over the right half of the abdomen, extending from the umbilicus downward and about half an inch over the median line to the left. All forms of sensation were delayed on the left side (see Fig. 1). The left rectus abdominus muscle was less prominent than the right and on arising from the recumbent position the right contracted firmly while the left remained inactive. The epigastric reflex was present on both sides. The abdominal reflex was absent on both sides, and the cremasteric reflex could not be obtained. The patient had considerable difficulty in voiding urine. He tired quickly when walking. There was marked swaying from side to side when walking with the eyes closed. He could not stand on the left foot alone. There was a marked tremor of the left lower extremity occurring after moderate exercise, no tremor of the right. Flexion and extension of the left leg and foot was very weak. There was some weakness in the right lower extremity. The patellar tendon reflex was exaggerated on both sides, more marked on the left. Ankle clonus on both sides, stronger on the left. Babinski toe reflex on both sides. There was no atrophy of the lower extremities. He complained of numbness of both lower limbs. (For sensory disturbances see Fig. 1.) Sense of position was markedly disturbed in the right foot, less so in the left. He had no pain in the extremities.

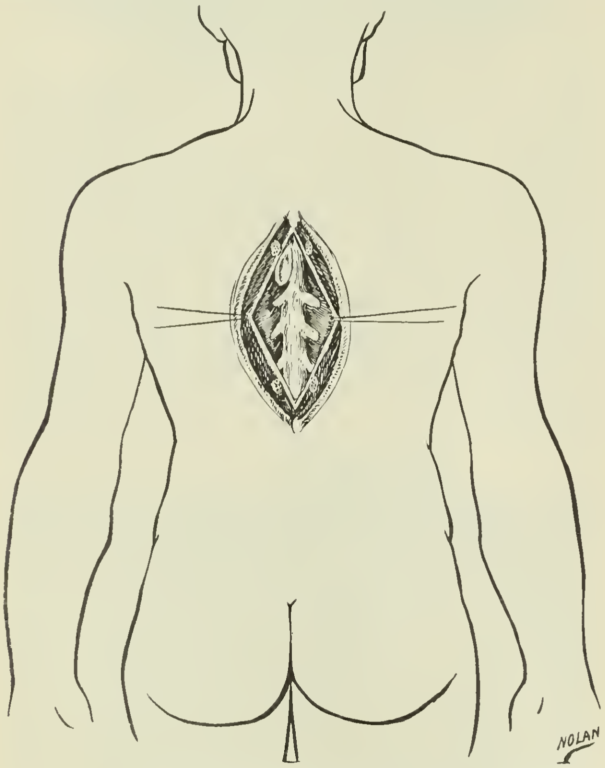

FIG. 3.—Showing the situation of the tumor and the compression of the spinal cord at this point.

The diagnosis of intradural spinal tumor, involving the sixth, seventh, and eighth dorsal segments was made and immediate operation was advised, confirming the diagnosis which Dr. Inglis had previously made. Although urging the patient to consent to an operation for the removal of the tumor, he delayed, and on November 9th of the same year the case was presented at the inaugural meeting of the Detroit Neurological Club. In the discussion of the case it was contended by two members that the case might be hysteria and by one member that it was a case of combined sclerosis.

On November 24, 1908, the patient entered Harper Hospital, in the service of Dr. Max Ballin, after an interval of two weeks from the time Dr. Inglis and Dr. Klingmann examined the case.

Dr. Ballin recorded the following notes:

The patient walked with difficulty. Ataxia was marked. Emptying of the bladder and rectum was difficult. There was some distention of the abdomen. On the day of admittance, a skiagraph of the spine was taken which showed that no change in the bony canal was present.

A brief summary of the symptoms present at the time of Dr. Ballin's examination is as follows:

1. An area of anæsthesia and analgesia extending over both lower extremities to a horizontal line at the level of the superior spines of the ilium. In a small area around the scrotum the anæsthesia was not complete. (See Fig. II.) 2. A neuralgic spot over the seventh intercostal nerve on the left side about two inches inside the mammary line. 3. Disturbance of temperature sense, more pronounced in the right leg. 4. Pressure on the eighth dorsal vertebræ causes pain. 5. Patellar tendon reflexes are exaggerated on both sides. 6. Ataxic gait. 7. Disturbance of bladder and rectum (retention).

The operation was performed at Harper Hospital, November 26, 1908, by Dr. Max Ballin. A deep incision was made over the spinous processes from the fifth to the ninth dorsal vertebra down to the bone. The long dorsal muscles were then stripped away from the laminæ with a blunt elevator after cutting the interspinous ligaments. The spines of the sixth and eighth vertebræ were removed, then the laminæ of the same vertebræ were severed. The dura was now opened and no tumor was found. The spinous process and laminæ of the fifth vertebræ were now removed, the opening in the dura enlarged and the tumor was found at the level of the fifth lamina. As the tumor reached higher up it was necessary to remove the laminæ of the fourth thoracic vertebræ and enlarge the incision of the dura, which brought into view a bluish tumor lying to the left of the cord attached to the subpial neuroglia of the cord and the posterior root of the seventh thoracic nerve. (See Fig. III.) The tumor was easily removed, the loss of blood was very small in amount, and the escape of cerebrospinal fluid was prevented by lowering the head of the patient. The dura was closed with a continuous catgut suture. A small piece of iodoform gauze was carried down into the lower and upper angles of the wound to the dura. The muscles were accurately approximated and sutured by interrupted chromocized catgut suture. The skin was sutured in the same way. The time required for the operation was twenty minutes. The patient was in excellent condition after the operation.

Postoperative notes: November 29th. Immediately after the operation there seemed to be an increase in the sensory symptoms and the patient was unable to move the lower extremities. On the third day after the operation he could again distinguish hot and cold on the legs and could move his feet. On the fourth day he complained of severe pain in his legs and back. The intestines were dis-

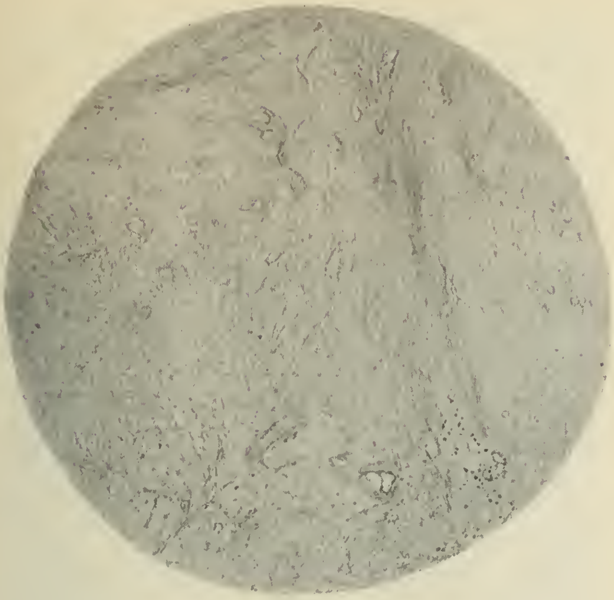

FIG. 4.—Drawing of section of specimen showing felt work of neuroglia fibres stained with phosphotungstic acid hæmatoxylin (Mallory) ocular 4, objective 3. (Klingmann, from the Laboratory of the State Psychopathic Hospital.)

tended with gas. Localizing sense in the legs was good. On the fourth day after the operation, he had pain in the bowels and legs for about a week. On December 5th he was able to extend and flex the legs. On the seventh of December twitching of the left leg was noticed. The packing was removed from the wound on the third day and the wound healed by first intention. On the eleventh of December a plaster corset was applied, and with this support the patient could move more easily. On the nineteenth of December he was able to sit up in bed without support. He had good control of his legs when lying down, but could not stand. He left the hospital on December 21st wearing a leather corset. Favorable reports from the family physician, Dr. Frank A. Weaver, of Charlotte, came regularly and the patient was steadily improving. In January, 1909, Dr. Weaver reported that the patient was rapidly recovering. At this time there was still a small area of anæsthesia about the spine of the ilium on the right side, also some numbness of the buttocks after sitting for a long time. The patient could stand and walk and had perfect control of the lower extremities. The sensation in the lower limbs was nearly normal and he had no pain. Dr. Ballin examined the patient on April 6, 1910, demonstrating the case before the Grand Rapids Academy of Medicine. At this time the patient weighed over two hundred pounds and had resumed full charge of his business. There was no disturbance in the gait except a slowness in starting. The reflexes were practically normal. The functions of the bladder and rectum and sexual power were restored. Sensation in the lower extremities was normal although at times his feet felt "as if he had two pair of socks on." At this time the patient had not worn a corset for eight months.

Pathological report: The tissue removed was an oval shaped tumor, 29x16 mm., of opaque bluish color, with an apparently well defined, translucent capsule, not adherent to the tumor but completely surrounding it and continuous with the pial nerve root sheath and that of the cord. The growth was entirely free from adhesions except for a small pedical at its upper end where it was closely connected with the seventh posterior nerve root and the outer surface of the spinal cord at this point. The pia covering it was not infiltrated. The consistence of the growth was rather firm. Its cut surface was of a pinkish hue and quite vascular. There were a number of small grayish areas, representing areas of softening.

Microscopical examination: The tumor is made up largely of a dense network of neuroglia fibres and sparingly few cells. The cells arranged in small groups were largely of the spider cell variety. Other large cells in part triangular, round or irregular in outline, with a large nucleus and a shining retractive nucleus were irregularly distributed among the dense network of fibrillæ. The special methods of staining connective tissue were used but the result gave no evidence that any part of the tumor consisted of connective tissue except the capsule which consisted of connective tissue alone and was not infiltrated with the neuroglia tissue nor was it firmly adherent to the tumor proper, while the fibrillæ of the substance of the tumor took on a uniform deep blue stain throughout the sections when treated with phosphotungstic acid hematoxylin stain according to Mallory's method (see Figs. 4 and 5) leaving the cellular elements unstained or giving the protoplasm of the large cells a grayish or faintly brownish appearance. Weigert's differential stain for neuroglia fibres was also used. We may, therefore, designate the tumor as a true glioma which had its origin in the neurogliar sheath of the root of the seventh dorsal nerve.

Prognosis: While the patient in question has apparently made a complete recovery, it would at this time seem imprudent to make a favorable prognosis as to permanent recovery. Glioma of the spinal cord is, without doubt, the most malignant of the tumors invading this region, owing to the fact that it is almost invariably intramedullary, causing actual destruction of the cord substance and in the great majority of cases the origin is central. Whether or not there is a peripheral focus which will eventually cause an intramedullary proliferation of neuroglia with a return of symptoms cannot be definitely determined at this time and only after a lapse of two or three years from the time of the operation without the slightest disturbance of the function of the spinal cord, could we assure our patient of a permanent result.

As there is no record of an analogous case in the literature, it will be of considerable interest to observe the final outcome of this instance.

The course of the disease was that of a slowly progressive segmental lesion in the earlier stage of development unilateral, giving the clinical aspect of the Brown-Séquard symptom complex. The characteristic pain, distinctly localized, due to nerve root irritation, was prominent from the very beginning and at no time seemed the diagnosis of a spinal tumor doubtful.

As a rule too much reliance cannot be put on the referred pain as a localizing sign of the site of the origin of the lesion, and while experience has shown the correctness of Brun's law in the majority of cases, this one seems to be an exception with

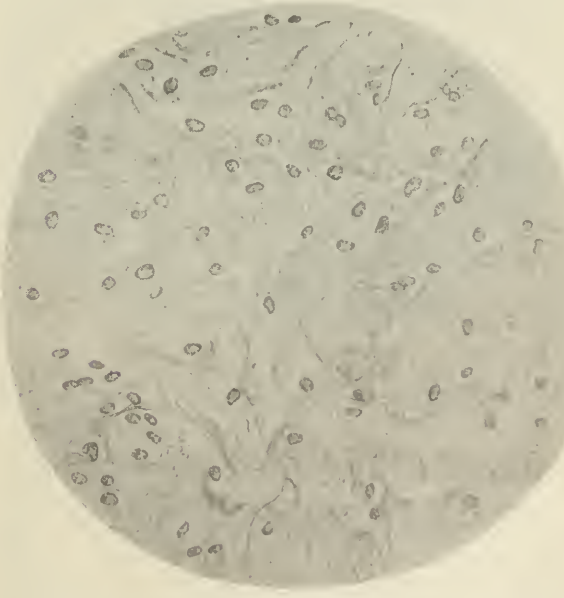

FIG. 5.—Drawing of section of specimen showing neuroglia fibres and nuclei of the neuroglia cells stained with phosphotungstic acid hæmatoxylin (Mallory) ocular 4, objective 8. (Klingmann, from the Laboratory of the State Psychopathic Hospital.)

reference to segmental involvement at the beginning of the disease.

This patient was seen very early by no less an authority than Dr. George Dock. At that time the only symptom was a pain sharply circumscribed in the one area supplied by the seventh thoracic nerve. There were no other symptoms, and Dr. Dock concluded that the cause was not due to any disturbance of the internal organs, and that it was a distinctly localized condition limited to the seventh thoracic nerve. It was clearly shown by the attachment of the tumor that there could not have been at the beginning of the neuroglia proliferation any involvement of the corresponding segment. Although originating very close to the spinal cord itself, the pain was referred from the nerve root.

About one half the patients who have been operated upon made a partial or complete recovery. Within the past two years the number of successfully operated cases has rapidly increased, which is entirely due to improved surgical technique permitting rapid operating.

The operation performed in two stages has been repeatedly recommended and the principle of extrusion of the tumors in surgery of intramedullary growths of the spinal cord has recently been urged by the most successful operators. An incision of the dura and pia at the first sitting is recommended. A number of successfully operated cases by this method are reported.

Auerbach and Brodnitz reported the successful removal of an intradural fibroma. The operation was done in two stages with an interval of two days. The operation was followed by flaccid paralysis for six weeks, which gradually subsided and after a year there was no sign of the former disturbance of the function of the spinal cord. The symptoms were: Paralysis of both lower extremities, retention of the urine, intermittent neuralgic pains in the region of the tumor but no localized tenderness. The tumor was situated in the upper dorsal region. Krause reports the results of twenty cases of compression of the spinal cord from growths or cysts within the vertebral canal. In two cases he made a long incision in the posterior median septum of the spinal cord, removing a small cyst in one and a small area of softening in the other, both resulting in recovery.

There are a certain number of cases in which intradural growths have been successfully removed without subsequent restoration of function in the spinal cord. Less frequently does the operation fail to expose the growth which is later found at autopsy. Whatever the cause of untoward results may have been, they are becoming noticeably less, consequently the prognosis has become better, which is entirely due to modern spinal surgery depending on modern methods. The opening of the spinal canal is far less dangerous than it formerly was and the removal of spinal tumors less formidable than the operation for brain tumors, and we can emphatically indorse the injunction of Victor Horsley that no good can come from delay in an operation. It can only do harm and result in less favorable states for operative interference, less chance of recovery, longer and greater suffering. It appears from the foregoing that an exploratory operation is indicated in every case in which symptoms of compression as a probable result of spinal tumor are present, or in which spinal tumor cannot be eliminated from the diagnosis.

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THE PROPER METHOD OF ADMINISTERING ETHER.

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It is not necessary that the anæsthetist should make a complete physical examination of the person about to be anæsthetized for the simple reason that it is his duty to give as small amount of the anæsthetic as will keep his patient surgically anæsthetized whether the patient is a "good subject" or not. So far as practical results go it does not matter to him if the patient is the victim of advanced renal or heart disease or a perfectly normal person. It is for the surgeon and his physical diagnosis assistant to determine the advisability of operating upon each individual person and to be prepared to take care of any postoperative sequelæ that may arise. It is the anæsthetist's simple duty to give as little anæsthetic as will suffice. In other words he should be just as careful in persons of apparently sound health as in those with kidney or heart lesion. He must not have it in his mind that in *this* case I must be very careful because of some known pathological condition, but I must be *very* careful in *every* case. If the surgeon is in doubt about the advisability of attempting an operation and desires the opinion of the anæsthetist I hold it perfectly proper for the latter to examine the patient and give the surgeon his opinion; but if the surgeon has already decided to operate the condition of the patient should not concern the anæsthetist, for it is his duty to give as little of the anæsthetic as possible and not to be especially careful in certain cases. but to be especially careful in every case. He should need no warning, but should be extra careful in all.

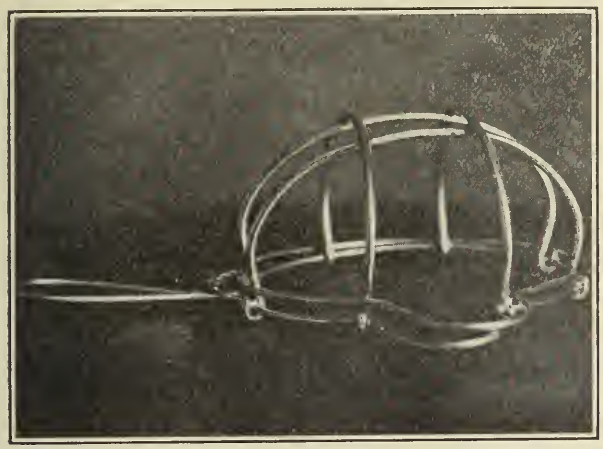

Fig. 1.—Wire mask.

Because the margin between complete anæsthesia and a fatal dose of chloroform is so narrow, I believe that ether is the only general anæsthetic that should be used. If a general anæsthetic is needed at all, I know of no condition in which ether is not by far the safest agent to produce the anæsthesia. Once upon a time some doctor discovered albumin in the urine of a patient who had been etherized, and telling a few of his medical friends, the news spread until it became the general belief that ether should not be used in cases known to have a kidney lesion; after a while someone put the idea in a textbook, and it has been handed down from preceptor to student as has many another error. And I just want to say in passing that if by intention or oversight an absolute falsehood creeps into a standard medical textbook it will be copied and believed for fifty years by practically the whole medical profession, so little do we think for ourselves.

In addition the average physician has little opportunity to pursue original investigations so must depend on the "authorities" for practically all his knowledge other than that obtained by clinical observation. Therefore if nephritis develops in a patient after being etherized it is practically impossible for the physician to ascertain just what factor was the cause of the kidney inflammation. Now if he were in a position to have a thousand cases offset by another thousand as control he could form an intelligent opinion as to the effect of ether upon the renal tissue. This statement is made simply to show how much value should be attached to the testimony of one not in a position to carry on experiments in a large way. Bearing this fact in mind I wish to say that after administering a large number of anæsthetics (ether) I have never seen a kidney disease made worse nor pneumonia produced nor any other "remote" accident that could by any stretch of the imagination be attributed to the anæsthetic. We now know that pneumonia sometimes develops as a complication of peritonitis and nephritis from operations upon the genitourinary organs. These "accidents" were formerly attributed to the ether used during anæsthesia. I have consulted a number of textbooks on materia medica and read many articles on anæsthesia and I have seen nothing that makes me believe ether in itself can or does produce any pathological change in any organ of the body.

By its rapid evaporation ether is said to reduce the temperature of the body, more particularly of the lungs, as it is largely eliminated by these organs. Here again my observation does not agree with the accepted belief. If such a lowering of temperature does occur it must be inconsiderable as the clinical thermometer does not show any changes.

Now I do not wish to be understood as believing that the administration of ether is devoid of danger to the one etherized. Any agent that renders a human being unconscious, that places him in such a state that his abdomen may be opened and his viscera manipulated without pain to him, certainly contains an element of danger to life; but I hold the danger is immediate and not remote, that if the patient fully awakens from the anæsthetic, so far as the anæsthetic is concerned, the danger is passed.

Starting with this presumption I wish to record what, in my opinion, is the best method to administer the drug and how the danger can be minimized, for I do not believe that it can wholly be eliminated, although I never have had a death from the administration of ether.

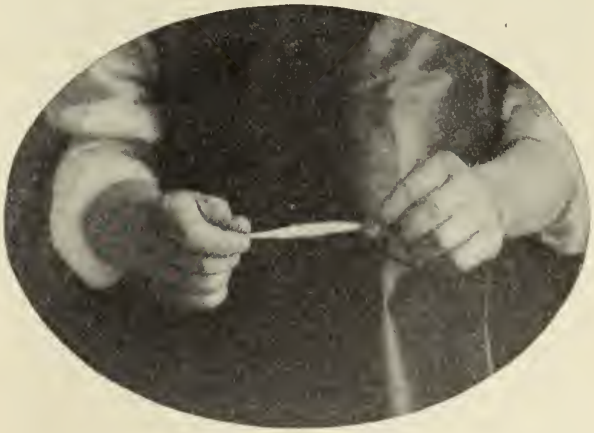

Fig. 2.—Preparation of wick.

All the armamentarium an anæsthetist needs is a hypodermic syringe, morphine and atropine, inhaler, ether, and a couple of small towels.

Thirty or forty minutes before beginning the administration of ether, the patient should be given a hypodermic injection containing one sixth grain of morphine and 1/120 grain of atropine. This is the size of the dose to be given an adult of average size and unaccustomed to narcotics. If the patient is over or under average size the dose should vary accordingly. Sometimes it is advisable to omit the morphine. This must be determined by the surgeon from the history of the patient. The morphine has a soothing effect and the atropine prevents the secretion of mucus in the throat.

When the operator is nearly ready the patient should be placed upon the operating table and the administration of the ether begun. The patient should never be moved after being anæsthetized until the operation is completed. The practice of anæsthetizing in the patient's room should be abandoned, as moving to the operating room may tend to awaken him and cause vomiting, and, in addition, the anæsthesia will last just that much longer.

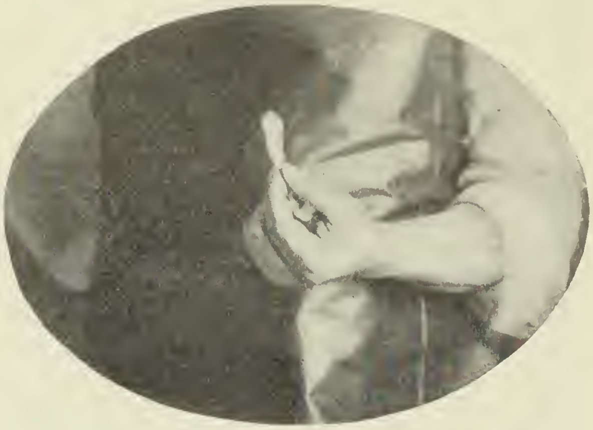

FIG. 3.—Wick ready for use.

It is at the beginning of the administration that the personality of the anæsthetist is brought into play as the behavior of the patient may be favorably influenced by tact, sympathy, and judgment. It is no small matter to "take" an anæsthetic and it never should be treated lightly. If you do not believe it just try it. I venture any physician will be more "scared" than any of his patients. Above all else let nothing hurry you. Let the patient see that you are perfectly at ease, that you know exactly what you are going to do, and that you are perfectly familiar with every detail of the procedure. Do not tell him "there is no danger" because there is and he knows it. Do not tell him to take deep breaths because that produces a feeling of suffocation and strangling and coughing. Tell him that the first half minute is the only disagreeable time and that during this period there is no danger, that you are going to give it slowly and gradually. Direct him to breathe as nearly naturally as he can, and inform him you will keep constant watch and at the first unfavorable sign you will take the mask away from his face.

After this little talk place a wet towel over his eyes, explaining that it is put there for the purpose of protecting his eyes. Then begin and keep your word by giving the ether very slowly, drop by drop, with plenty of air, until the mucous membrane of the throat is anæsthetized, when you can push the ether without discomfort to the patient, by allowing the drops to fall at lessened intervals. After the patient is partially insensible wrap a towel around the base of the mask to exclude some of the air and continue the ether drop by drop until anæsthesia is complete.

I have long looked for a sign by which I could learn when the patient was ready, but there is no such sign. One must be guided by the amount of ether used and by the breathing of the patient. When the respiration is deep and regular, accompanied by slight snoring, the patient is usually ready, but not always. However, the surgeon may now begin, and if there is slight resistance on the patient's part a few more breaths will have him completely under.

From this time until the operation is completed the patient should receive just enough ether to maintain surgical anæsthesia. The knowledge as to when the patient is receiving just enough can be gained only by experience and is a matter of combined intuition and observation. The respiration and the knowledge of the amount of ether already used must be our guide. One of three things is the earliest sign of returning consciousness. Very shallow respiration, swallowing, or rolling of the eyes. I very seldom look at the eyes, as they should be protected throughout the operation, so consider the last sign of very little practical value. Shallow respiration is a symptom of two very diverse conditions. One, when the patient is nearly overcome by the ether and is in a very dangerous condition, and the other when he is very close to the wakening point. It is needless to say the anæsthetist *must* know which of these conditions is present, for the life of the patient may depend on this very knowledge. Should he push the ether at the wrong moment the result might be disastrous.

During the whole period of anæsthesia the patient's head should be turned to one side, because if there should be any excessive secretion of mucus it will collect in the dependent cheek and can be readily removed. This position of the head also tends to keep the pharynx from becoming obstructed by preventing tongue and soft palate from fall-

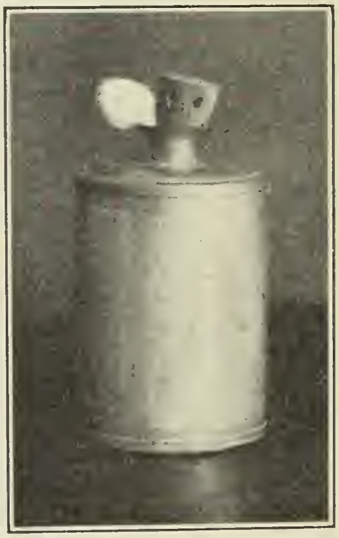

FIG. 4.—Wick inserted in opening of cork of a small ether can for the drop method.

ing backward and thus obstructing the respiratory channel. For several years I have not used a tongue forceps, as a piece of gauze or a thin towel in the fingers will permit of the tongue being grasped and firmly held without injury, if this becomes necessary. This procedure is seldom required, however, as the tongue can nearly always be brought sufficiently forward by placing the thumb at the angle of the jaw and pressing the lower jaw beyond its articulation with the upper.

If the operation is prolonged change the patient's head to the other side and always see that the arms are not hanging over the side of the table, as this sometimes produces paralysis.

If the patient becomes cyanotic and the respiratory passages are in no way obstructed, the cyanosis can be overcome by removing the mask and allowing a few breaths of pure air.

When giving ether experienced anæsthetists watch practically nothing but the breathing, but if desired, the pulse can be followed by a finger placed upon the facial artery.

Of a number of methods that bring equally good results, it is obvious that the most simple should be used. Therefore, in the administration of anæsthetics the less paraphernalia and the simplest methods that can be satisfactorily used should be employed. I have investigated many of the elaborate apparatus advocated by various men, and I believe they possess no advantages over the simple wire mask shown in the illustration (Fig. 1). The mask should be covered with gauze, eight to twelve layers in thickness, according to mesh. This covering should never be thick enough to in the least interfere with the respiration. I buy the ether in large cans because it is cheaper, and use the small can in giving the anæsthetic because it is smaller and easily handled. I find the ether made by one reliable manufacturer is as good as that made by any other, although it may be sold cheaper.

It is quite a little trick to make a "wick" that will drop the ether nicely. This is best accomplished by selecting a pledget of cotton, drawing out the fibre (Fig. 2) until the pledget is about three inches long, and as large around as a lead pencil. This is then twisted tightly and allowed to fold upon itself (Fig. 3). The loose ends are inserted in the can through a notch in the cork. A similar notch should be cut in the opposite side of the cork for the entrance of air.

Security Building.

ANÆSTHESIA DANGERS.

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The safety in the administration of chloroform as an anæsthetic in obstetrical work is proverbial. In most cases of pregnancy when the physician finds no evidence of heart disease this anæsthetic has proved quite satisfactory as, for example, in forceps delivery. As a rule very little chloroform is used in these procedures; the patient is soon under the influence of the anæsthetic and seldom have we unpleasant after effects. The physician may at times be too hasty and endeavor to accomplish forcible delivery in a difficult case before the patient is under the influence of the anæsthetic. The circulatory system is alreay taxed by the drug, and misguided efforts on the part of the patient, especially if prolonged, further complicate the labor, and there is liability to shock. Like all other anæsthetics, chloroform to be given satisfactorily should be given carefully. In the first place, examine the patient's heart and vascular system, the lungs and, if possible, the condition of the kidneys. This drug especially must be given slowly and evenly, that is to say, not poured on and then after an interval poured on again. The lips and surrounding parts should have been anointed previously with petrolatum, as I have seen a considerable dermatitis—the so called "chloroform burn"—result from careless spilling of the drug upon the neck and shoulders during administration. Moreover, chloroform should be pure and kept away from the light, lest irritating and poisonous chlorine be administered instead of chloroform.

The importance of both careful administration and preparatory examination of urine is emphasized by a review of two cases that might have resulted disastrously under the administration of chloroform. Right here let it be emphasized that in cases requiring anæsthesia, there is always the possibility of complications such as shock, etc., and then the safety of the patient rests in the preparations at hand for emergency. Patients who may prove difficult, therefore, should be urged to be taken to a hospital. The cases to be quoted were two hospital patients, young women, delivered by forceps.

Case I. A Polish woman, thirty-five years of age, was the first patient. During the labor, the child's head would not engage; the membranes were ruptured, and under chloroform high forceps (Tarnier's axis traction) applied. The anæsthetist seemed intent upon taking in the operative procedure, and attention was called, while considerable traction was being used, to the patient's poor pulse and cessation of respiration. Much force had been applied also before the patient was relaxed; quite a good deal of the anæsthetic had been given when the accident occurred. In a very short time she became cyanosed; her lips were blue, pupils dilated, extremities cold; she was pulseless and had stopped breathing. With forceps still extending from the vagina all attention was immediately given to the withdrawal of the chloroform and administration of rhythmical respiratory movements together with traction outward of the tongue during expiration. Oxygen was given; strychnine and camphor were given hypodermically, and later repeated every two hours. In a short time there was a feeble attempt at a voluntary gasp and things looked a little more promising. This was followed by a better effort and perceptible pulse. In about ten minutes or so a very little ether was given and the child forcibly extracted, now that the pulse was of pretty fair volume but rapid. The child was soon resuscitated. Following the delivery of the decidua, there was profuse post partum hæmorrhage from relaxation and shock. Fluid extract of ergot having been given hypodermically, a hot uterine douche of lysol was next administered and the uterus packed with sterile gauze. The rest of the treatment then comprised external heat, hot coffee, stimulating enema (110° F.), abdominal binder, enteroclysis, catheterization, and reinforced vaginal dressings. The patient walked out of the hospital in good condition in fifteen days with an equally perfectly well baby.

Case II. The other woman was also a foreigner, æt. twenty-three years. Her uranalysis showed the presence of a heavy cloud of albumin and a few hyaline casts. Examination of lungs negative. She had a difficult labor, requiring the use of forceps (Simpson's). Measurements contracted. Position of child's head was right occipito-anterior. Chloroform was given rather freely, and the patient went into a condition of shock requiring artificial respiration and stimulation. Mother and infant were discharged in good condition in about two weeks.

Unfortunately, not all cases of anæsthetic shock result so favorably, and care should be exercised even in labor cases lest "chloroform shock" be encountered.

Before giving an anæsthetic, choose a good inhaler to prevent interference with respiration; keep the mouth free from mucus; remove false teeth or other foreign bodies; have oxygen ready for emergency; sometimes it is well to begin by using atropine and morphine before giving chloroform, and atropine before ether; I prefer ether in cases with heart disease or kidney trouble and chloroform in pulmonary cases if one or the other must be given. Be sure to have no flame or cautery around ether fumes. Since cocaine was first used in 1884 in Vienna for anæsthetic purposes, many methods of giving it have come into vogue. Used locally or hypodermically not enough time is allowed to pass, as a rule, for its efficient action. Several minutes should be allowed, and the same may be said about ethyl chloride locally. The latter drug should not be used for prolonged general anæsthesia. Various dilutions and combinations of drugs, as the ether, chloroform, and alcohol mixture, have been employed with inconstant results. Recently stovaine, eucaine, and quinine hydrochloride and urea have been used for anæsthesia. Variable amounts of spinal fluid having been removed, two to four c.c. of a from 0.5 to four per cent. solution of good stovaine are injected through a platinum needle into the canal. Even high injections have been tried but with disappointing results on the whole. After spinal injections of cocaine persistent cephalalgia and annoying emesis have been noticed in most of the cases. It is well to have nitroglycerin in a hypodermic syringe ready after giving cocaine. Following stovaine shock, confusion, paralysis, and sometimes sudden death have occurred.

The following is an outline of a case that became very serious under stovaine anæsthesia:

CASE III. J. M., having been treated in a hospital, was transferred to the surgical word to be operated upon for a right inguinal hernia. He was given an aperient and was in good shape. Two cubic centimetres of a two per cent. solution of stovaine from the hospital drug department were injected in the lumbar portion of the spinal canal. During the beginning of the operation he experienced no pain but in the last part he began to perspire freely and his pulse went up to 110 and then became imperceptible; temperature was 97° F. His pulse became a little better by a slightly elevated position, and in about five minutes while being examined became worse. The examination showed anæsthesia up to the waist line (deep and light) and sensation to heat about one inch lower. He was given an intravenous injection of normal saline solution with 1 in 1000 adrenalin, one drachm; aromatic spirit of ammonia; camphor, three grains; atropine sulphate, 1/150 grain; strychnine sulphate, 1/20 grain; caffeine; spiritus frumenti; cocaine; 1 pint of coffee per rectum; and galvanic battery. The patient became delirious and cyanotic and oxygen was administered. He was prepared for a lumbar puncture so as to draw off some of the spinal fluid but he began to pick up and in a couple of hours was apparently out of danger. He continued to have weakness and numbness for six weeks and had to use a wheel chair for locomotion. He finally got around with the use of a cane and has complained of numbness right along.

These cases should make us extremely careful, especially in the administration of a new anæsthetic, so as to choose for the patient the best for that particular case, and then no doubt in this country and abroad mortality can be greatly reduced.

THIRTY-FOURTH AND PINE STREETS.

LOCAL ANÆSTHESIA IN GENERAL SURGERY.

By LEIGH F. WATSON, M. D.,
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Local anæsthesia should be selected whenever a choice of anæsthetics is possible, because of the greater safety and comfort afforded the patient.

To those using the cocaine method the advantages are apparent, and the field continually enlarges as the technique improves.

The importance of local anæsthesia has never been sufficiently appreciated in America. Mitchell has said, this may be due to American hurry, but more probably to inexperience in the method and a certain deep rooted fear of poisoning traceable to the days of strong cocaine solutions.

The strong solutions are equally or more dangerous than general anæsthesia, while the weak solutions are the safest of all methods of analgesia. Reclus says, cocaine, when properly and prudently administered, is the least treacherous of all anæsthetics; when local anæsthesia is possible I prefer it to ether or chloroform because I believe it less dangerous. I have employed it during the last twenty-three years in over ten thousand operations, not only without a death but without any disturbance of the "équilibre physiologique" of the patient.

A. E. Barker, of London, in a personal communication, says, I use local anæsthesia whenever time permits, as I have strong objections to using general anæsthetics which involve risk, whenever a local anæsthetic can be employed which involves no risk. Reclus states that the reason dentists have frequent mishaps with cocaine is because of their faulty technique: 1. They use too strong solutions. 2. They inject the cocaine with the patient sitting up. 3. They permit the patient to stand up, walk around, and go away too soon after the operation. This accounts for the frequent occurrence of fainting, nausea, malaise, and vertigo. He reports over 70,000 extractions and operations on the teeth according to his technique without a single accident.

Halsted was the first to emphasize the importance of the intradermal use of cocaine, and the first American surgeon to employ it as a local anæsthetic (1884). The importance of using the weak solutions was first urged by Corning (1885), Reclus (1886), and Schleich (1888). Their subsequent adoption did much to extend the scope of local anæsthesia. Schleich suggested the extreme dilution of from 0.05 to 0.01 per cent. Reclus says, anæsthesia with Schleich's weakest solutions is tardy in appearance and fleeting in effect.

Familiarity with the technique and the employment of the weak solutions has given cocaine a wide range of use in the hands of Matas, Crile, Bodine, Cushing, Mitchell, Gilday, Horsley, Samuell, and a few other American surgeons. Schleich has stated that ninety per cent. of his operations are completed under local anæsthesia, Mitchell has over fifty per cent., and Bodine and Gilday perform over one third of their operations under cocaine anæsthesia.

Untoward or poisonous symptoms have never been observed to follow the use of the weak solutions. The weaker the solution, the greater the amount of cocaine that can be injected without producing toxic symptoms; twice as much can be injected with safety in a one fourth per cent. than in a one per cent. solution.

Upon the strength of the solution depend the rapidity, intensity, and duration of the anæsthesia. With the strong five per cent. solutions anæsthesia is complete as soon as the injection is made, with the two per cent. solutions anæsthesia is almost immediate, while with the solutions weaker than one half per cent. a longer wait is necessary, usually from two to three minutes, the time required to prepare the field of operation.

Success in the use of local anæsthesia depends on patience, an intimate knowledge of sensory nerve distribution, and special training in the method. The technique of the injection is always delicate; it varies with each region, each operation, and in each patient. The technique must be learned with a knowledge of its application and adaptation to each individual case. Because of the slower appearance of complete anæsthesia with the weaker solutions, surgeons that begin operating as soon as the injection is finished will often fail with local anæsthesia.

Mitchell states that cocaine is a protoplasmic poison, forming with protoplasm an unstable compound that breaks down slowly, after which the tissues return to their previous condition and resume their normal function; cocaine which has exerted its anæsthetic action and entered into this combination cannot be absorbed into the circulation, and, therefore, poisoning can only be due to absorption of an excess.

Cocaine first excites and then paralyzes protoplasm. It anæsthetizes all nerve fibres, both motor and sensory. When applied locally to mucous or serous membranes or injected subcutaneously, cocaine reaches the terminal nerves and produces analgesia. Water will produce temporary anæsthesia if a sufficient amount is injected to paralyze the nerves from pressure, as soon as the water is absorbed and the pressure removed the sensibility to pain returns. Schleich first noticed the pain and irritation following the injection of plain water, the "anæsthesia dolorosa" of Liebreich, and suggested the use of normal saline solution.

Ethyl chloride has a very limited field as a local anæsthetic because of the pain caused by the freezing, the pain of the tissues thawing out, and the hyperæsthesia that always follows the use of freezing mixtures.

Corning (1885) was the first to employ elastic constriction to prolong and intensify the anæsthetic action of cocaine. The constriction also prevents rapid absorption and toxic symptoms when the strong solutions are used. Elsberg and Barker first suggested the addition of adrenalin to the cocaine solution to confine it to the area injected and limit absorption. Pressure anæsthesia, according to Braun, can only be obtained by sufficient pressure to injure the nerves. Victor Horsley believes the ordinary Esmarch bandage often injures the nerves of the extremities and should never be used except when absolutely necessary, and always removed as soon as possible.

Eucaine and novococaine have been widely employed as substitutes for cocaine, to avoid the toxic symptoms. Eucaine is only one fourth as toxic as cocaine but the effect is obtained more slowly, anæsthesia only lasts one half as long and is never as deep as with cocaine. Pouchet has proved experimentally that eucaine is not as harmless as at first supposed. He found that in the beginning the symptoms were not as marked as those of cocaine, later it is more dangerous because the accidents it causes appear unexpectedly without prodromal symptoms, the animal dying suddenly without a chance for resuscitation. More hæmorrhage follows the use of eucaine because it produces a hyperæmia of the superficial vessels, while cocaine produces a vasoconstriction. Eucaine infiltration is more painful than cocainization because the anæsthesia appears more slowly. After a thorough trial of novococaine, Bodine says, it does not add to the safety of the patient nor is the anæsthesia as satisfactory as with cocaine. Novococaine, according to Braun, is a strong but fleeting local anæsthetic and is useless unless combined with adrenalin; the effect appears in twenty minutes. Lennander also states that novococaine is unsatisfactory unless combined with adrenalin; he emphasizes the importance of always waiting thirty minutes after injecting the novococaine before proceeding with the operation so as to obtain complete anæsthesia.

Urea and quinine hydrochloride was suggested as a substitute for cocaine by Thibault. The effect is obtained more slowly than with eucaine but the anæsthesia lasts longer than with cocaine. It was employed in the clinics of Wyeth and Bodine soon after Thibault's report, but was later discarded in favor of cocaine. The principal objection was the slowness of the anæsthesia after the solution had been injected. This unnecessary loss of time proves very annoying to a surgeon accustomed to the immediate anæsthesia following cocainization. Hertzler, Brewster, and Rogers particularly recommend urea and quinine hydrochloride for amygdalectomy, operations on hæmorrhoids and fistulæ because of its prolonged analgesia after the operation.

Stovaine, according to Pouchet, Billou, and Goyanes, is two to three times less toxic than cocaine but hypodermically it sometimes causes sloughing of the tissues. Spiller and Leopold have demonstrated experimentally that the intraspinal injection of stovaine is followed by degeneration of the anterior roots and motor paralysis.

Bodine has remarked, so long as cocaine fulfills all the requirements of the ideal local anæsthetic it is a waste of time to experiment with others of doubtful value.

The sensation of pain is confined to the skin, nerve trunks, parietal peritonæum, periosteum, and synovial membranes of joints. There is no sensation of pain in bone substance, bone marrow, cartilage, tendon, articular surface of bone covered with cartilage, lungs, heart, bladder serosa, bile ducts, kidney, pelvis, and ureter. Lilienthal was one of the first to note the absence of sensation in the intestine.

Lennander has demonstrated that all internal organs obtaining their nerve supply from the sympathetic and vagus, below the branching of the recurrent nerve, have no sensation. For this reason the abdominal and pelvic viscera are insensitive to heat, cold, pain, and pressure both in health and disease.

In operating for a depressed fracture of the frontal bone under cocaine anæsthesia Bodine noted an absence of sensation in the dura and brain substance of the frontal region. Braun states that the dura is sensitive beneath the occipital bone. Lennander has observed sensation to pain in the dura beneath the zygomatic arch, elsewhere he says it is insensitive. A slight twinge of pain is felt when bloodvessels are divided. Traction on the ligaments of the thoracic, abdominal or pelvic viscera will cause pain, traction on the mesentery besides producing pain will cause nausea, and if traction is severe vomiting may occur.

The operator must gain and maintain the confidence of the patient by engaging him in conversation during the entire operation, and so far as possible keep his mind occupied. When retraction is necessary, as in abdominal work, the diversion of the patient's attention gives greater relaxation of the muscles and affords the operator a better view of the field without producing pain. Nerves, no matter how small, should never be handled previous to cocainization, to do so will lessen the confidence of the patient in the method, cause unnecessary pain, and a certain amount of shock. For a similar reason lacerated and contused wounds of the extremities should not be prepared for operation previous to cocainization.

Without the absolute confidence of the patient work under local anæsthesia will tax the patience of the most skilful surgeon, therefore, it is very important to always proceed slowly during the early stages of an operation under cocaine. Bodine impresses on the patient the less solution used the quicker the healing; by this method it is possible to make every drop count. With a nervous patient a drop of carbolic acid or ethyl chloride spray may be used to deaden the slight pain of the first insertion of the needle.

The addition of adrenalin to the cocaine solution gives a bloodless operative field, and by limiting absorption prolongs the effect of the cocaine and prevents toxic symptoms from the strong solutions. I consider the addition of adrenalin unnecessary to prevent poisoning when the weak solutions are used, besides it increases the tendency to secondary oozing of blood into the tissues.

Usually one fourth to one half grain of cocaine is all that is required for major operations, including appendectomy and herniotomy, although two grains can be safely employed by using diluted solutions and distributing it over one or two hours' time. Bodine states there has never been a case of death reported following the use of two grains or less of cocaine hypodermically.

Epigastric discomfort, transient pallor, and sweating frequently occur at the beginning of an operation under local anæsthesia, even with the most dilute cocaine solutions. These are not symptoms of cocaine poisoning and should be disregarded, as they disappear in a few minutes when the operation may be continued and more cocaine used with the assurance that they will not recur. Bodine says they are purely psychic, the strangeness of being cut even without pain is responsible, and as surgery under cocaine becomes better known to the people these psychic phenomena will become less frequent.

Reclus insists that it is very important to always have the patient in the horizontal position so as to keep plenty of blood in the head, the first effect of cocaine is one of vasoconstriction both local and systemic. He says in speaking of "idiosyncrasy," "I certainly admit that certain individuals are more 'sensible' (sensitive) than others to cocaine, and while one is able to tolerate large doses, in others weak doses will produce toxic symptoms; the idiosyncrasy is not confined to cocaine alone but is common to other alkaloids as well. We have seen grave symptoms follow one twenty-fourth grain of morphine, while it is well known that from one sixth to one third grain are ordinarily perfectly tolerated."

Reclus and Legrand state that the inhalation of three or four minims of amyl nitrite is the most effective antidote to relieve the vasoconstriction of cocaine poisoning.

Advantages. While it adds to the comfort and safety of the young and robust, in the presence of old age, shock, hæmorrhage, or pulmonic, cardiac, or nephritic lesions local anæsthesia is especially indicated.

There is an absence of the fear many patients have for a general anæsthetic and its after effects. While children and nervous patients are not the most favorable subjects, this factor alone is not sufficient to exclude local anæsthesia; although it requires more time to gain their confidence and much care to maintain it. When they finally become convinced that the method is absolutely painless they are usually model patients.

The nervous, frightened patient is the one that suffers most from shock under general narcosis and for that reason alone an effort should always be made to employ local anæsthesia.

I have never seen a patient who went through an operation under cocaine anæsthesia that regretted the selection of the method, nor one that would consent to general anæsthesia for a second operation. This is well illustrated in patients with double herniæ, they usually desire both operations at one sitting and invariably refuse to even consider general narcosis for the second operation. It is not at all unusual for a patient to fall asleep during the latter part of an operation under local anæsthesia, especially when the work is necessarily long and tedious. As there is no necessity for hurry, fewer assistants are required than when general anæsthesia is employed. Bodine states that the gentler handling of tissues under local anæsthesia, the avoidance of cutting nerve trunks, the use of as few ligatures as possible, the absence of nausea and vomiting favor an early repair without infection and in cases of herniæ lessen recurrence.

Besides the absence of nausea, vomiting, and shock, the postoperative pain is less than that following general anæsthesia. Reclus states that twenty-five per cent. of the cases having cocaine anæsthesia slept the night following the operation, while only seventeen per cent. of the cases receiving chloroform slept the first night. The first thought of every surgeon is to provide the minimum operative danger with the maximum postoperative comfort for each patient.

Disadvantages. The most serious disadvantage of local anæsthesia is that its application is limited to those parts of the body where the nerve supply can be controlled. Much more time is required than when operating under general anæsthesia; there are so many advantages, however, that the question of time will seldom have to be considered, except in large clinics.

Vein anæsthesia was first suggested by Bier. This is a rapid method of obtaining complete analgesia of a limb which will allow resection of joints and other extensive bone operations. The blood is expelled from the part by means of Esmarchization and a tourniquet applied above and below the field of operation and the limb anæsthetized by injecting the cocaine into a superficial vein between the tourniquets, anæsthesia is complete in a few minutes and remains until the tourniquets are removed. I have reported a case in which an infected wound of the foot was freely incised under vein anæsthesia without the knowledge of the patient. A tourniquet was applied just above the knee and fifteen cubic centimetres of a one fifth per cent. cocaine solution was injected into the external saphenous vein in the upper third of the leg. Anæsthesia was complete in thirty minutes extending as high as the point of injection. Sensation reappeared as soon as the tourniquet was removed. No untoward symptoms were present at any time. Freeman has recently reported a case operated in under vein anæsthesia. Bier, in a personal communication, states that he has employed vein anæsthesia in 220 cases without harm to the patients. He injects 100 c.c. of a one half per cent. novococaine solution. Vein anæsthesia is contraindicated in children, senility, and diabetic gangrene. Hartel has recently described Bier's latest technique in detail.

Arterial anæsthesia was first employed by Goyanes. In a communication to the Madrid Academy of Medicine and Surgery, November, 1908, he says: "About a year ago we had occasion to practise a series of experiments on dogs in studying the anæsthetic and toxic action of certain drugs. From a previous study of the surgery of the bloodvessels we were already familiar with the traumatic experimental lesions of the arteries and veins. We now endeavored to find a new method of conducting the anæsthetic to the central nerves and other regions of the body, that could be utilized in the clinic. The first case, an amputation of the arm, was operated in on November 7, 1908." In his latest communication he states that he has performed over twenty amputations and dissections on the extremities with excellent results. Goyanes' technique is as follows: The extremity is exsanguinated by means of Esmarchization, and a tourniquet applied above and below the field of operation. The most important artery of the region is selected and opened under infiltration anæsthesia. 50 to 100 c.c. of a five per cent. novococaine in normal salt solution is injected slowly and gently through a very fine needle. By introducing the needle obliquely into the artery there will be no subsequent hæmorrhage. Methylene blue is added to the solution that the operator may observe the penetration of the tissues by the anæsthetic. The anæsthetic passes into all the vessels in five minutes, the skin is colored a light and the arteries and veins a dark blue. In from five to ten minutes the anæsthesia is complete. After conservative operations (resection of joints, excision of tumors, curetting bones, sequestrotomies, etc.) the distal tourniquet is first removed to permit the arterial circulation to flow while the venous return is impeded; this produces a venous hæmorrhage that carries the anæsthetic out of the circulation, finally the peripheral tourniquet is removed. Partial anæsthesia persists for several hours, and the patient is free from postoperative pain. Oppel states that cocaine solution is eight to ten times safer injected into the aorta than into the inferior vena cava. Injected into the aorta the cocaine is neutralized and diluted, while in the veins it almost immediately comes in contact with the cerebral and medullary centers producing symptoms of intoxication. Cocaine is twice as fatal in the aorta as in the femoral artery. Petrows states the toxic dose of cocaine was two to three times and the fatal dose seven to nine times greater without than with the use of a tourniquet on the limb. Oppel says he was sure from the start that vein anæsthesia was not the last word on local analgesia, but that it would be necessary to consider the feasibility of arterial anæsthesia. Bier states, it is very probable that better local anæsthesia will be obtained through the arteries than through the veins. Goyanes says, in conservative operations our experimental work and practice in the clinics up to date has demonstrated that the method is harmless to the vessel. It is easy to understand that the diffusion of the anæsthetic through the region is much better and more physiological when injected into an artery than the injection into a superficial vein. Ransohoff has recently reported several operations, chiefly amputations, successfully performed under arterial anæsthesia. He uses a one tenth per cent. cocaine solution.

Solutions. The cocaine solutions should always be freshly prepared for each operation and of a definite strength, so that the operator may at any time know the exact amount of cocaine that has been used. The cocaine should be sterile and dissolved in sterile normal salt solution. Cocaine can be sterilized by heating to 212° F.; a temperature above this, as well as repeated sterilizations, are injurious. Reclus states that cocaine solution left exposed to the air begins to lose strength by the end of the first week and at the end of three weeks almost ceases to be analgesic. If sterilized and kept in sealed tubes it does not deteriorate. He has performed gastrostomy with a one half per cent. solution four and one half years old and was unable to note any loss of strength in the solution. The most convenient form of cocaine on the market is put up in sealed glass tubes as suggested by Bodine. Each tube contains cocaine hydrochloride 0.06 gramme and sodium chloride 0.18 gramme. They are sterilized by the manufacturer. The contents of one tube dissolved in one ounce of warm sterile water make a 1 in 500 cocaine in normal salt solution; to make a 1 in 1000 solution this is diluted with an equal amount of sterile normal salt solution. Mitchell recommends a tablet containing cocaine hydrochloride 0.05 gramme and adrenalin 0.00016 gramme. These are sterilized by dry heat an hour on three successive days. One tablet dissolved in fifty cubic centimetres of normal salt solution gives a 1 in 1000 solution; this he uses for infiltration. One tablet to five cubic centimetres gives a one per cent. solution: this or a one half per cent. he employs for nerve blocking.

Eucaine and novococaine can be boiled without injury.

Barker employs eucaine, one fifth per cent., or novococaine, one fourth per cent. with adrenalin. Braun and Lennander prefer novococaine. The strengths recommended by Braun are as follows:

	I.	II.	III.	IV.
Cocaine hydrochloride;.	0.1	0.1	0.05	0.05
or				
Novococaine, ...	0.25	0.25	0.1	0.1
Normal salt solution, ..	100.0	50.0	10.0	5.0
Adrenalin, ...	5 minims	5 minims	5 minims	5 minims
Strength:				
Cocaine, ...	1 in 1,000	1 in 500	1 in 200	1 in 100
Novococaine, ...	1 in 250	1 in 125	1 in 50	1 in 25

Urea and quinine hydrochloride (equal parts) in strength of one fifth to one half per cent., give complete anæsthesia, stronger solutions will cause sloughing of the tissues. It is most conveniently dispensed in five grain capsules. One dissolved in an ounce of normal salt solution makes a one per cent. solution. Sterilize by boiling in a test tube just before using. This can be further diluted as required with sterile normal salt solution.

An all glass syringe that holds one or two drachms is most convenient for infiltration and nerve blocking. The needles must be kept sharp and clean, and the smallest size should always be used for infiltrating the skin.

Preliminary treatment: The same aseptic and antiseptic precautions should be carried out as for any major operation. An extra cushion should be placed on the operating table to make the patient as comfortable as possible during the operation. A soap poultice should be applied for six hours preceding the operation, or the ten to twenty per cent. oleate of mercury in lanolin dressing used, as recommended by Bodine. This softens the epidermis and facilitates the skin infiltration. When time does not permit the application of a preliminary dressing the surface should be prepared, dried, and an application of tincture of iodine made to the field of operation. A dressing of scarlet red in lanolin is very useful to promote the rapid healing of skin wounds as well as chronic ulcers and burns, besides being mildly antiseptic it stimulates the epithelial cells which results in a rapid epidermization over the raw area.

As a rule, all patients should receive a dose of morphine (from 1/16 to ¼ grain) one hour before operation. This allays any restlessness or nervousness that may be present and takes the edge off of the slight pain the patient may experience during the operation. It also lessens psychic shock and prevents toxic effects in patients with an idiosyncrasy for cocaine.

Patients who are very nervous or excited should receive a preliminary dose of morphine and hyoscine hydrobromide sufficient to produce drowsiness, thus effectually preventing psychic shock. Psychic shock alone has been known to cause death before operation as well as during convalescence. Bodine and Gilday have obtained excellent results by treating morphine poisoning with large doses of cocaine and vice versa. The addition of hyoscine to the preliminary dose of morphine makes possible the completion of operations under local anæsthesia that have heretofore been regarded as only suitable for mixed or general anæsthesia, as large umbilical and ventral hernia and selected cases of acute appendicitis.

Mixed anæsthesia. By combining local with general anæsthesia less of the general anæsthetic is required, the period under general narcosis is greatly shortened, and the liability to postoperative complications is reduced to a minimum. The shock of major amputations is avoided by the cocainization of large nerve trunks previous to their division, as first suggested by Crile.

The intraspinal use of cocaine or tropococaine has not been considered because its field is constantly narrowing as the technique of local anæsthesia is perfected. There are ten per cent. of failures to obtain anæsthesia in the hands of experts. The after effects are more frequent and serious and the mortality is higher than with general narcosis. Gabbett reports a case in which he injected novococaine 0.1 gramme, and strychnine 0.001 gramme between the eleventh and twelfth dorsal vertebra. Death followed in one half hour with tonic spasms of arms and chest. Gabbett believes the death was due to strychnine poisoning. This is the technique recommended by Jonnesco, the addition of strychnine to prevent poisoning from the anæsthetic.

Local anæsthesia can be employed in any part of the body where the nerve supply can be controlled. With a proper selection of cases the majority of surgical operations can be performed under local anæsthesia.

A one fifth per cent. cocaine solution is used for the skin and nerve trunks; elsewhere a one tenth per cent. solution is employed. Matas prefers massive infiltration of all the tissues, using a very dilute solution which is rapidly injected under pressure with a special apparatus, then ice bags are applied over the infiltrated area to intensify the analgesia. When extensive and tedious dissection is required in an area well supplied with nerves, as the breast, Matas' method should be employed. Along the line of incision a series of small wheals (about one third to one half inch in diameter) are produced by thrusting the point of the needle just beneath the skin surface and injecting until the area turns white. The needle is then withdrawn and reinserted at the furthest edge of the anæsthetized area and the procedure repeated until the entire line of incision is cocainized. With proper cocainization the anæsthesia of the skin incision will remain for an hour and a half, or longer. A subcuticular stitch will make the suturing painless when sensation has returned to the skin wound after a long operation. The point of the needle should always be in sight (intraepidermal), otherwise an unnecessary amount of solution will be required to anæsthetize the sensory nerve terminals. It is impossible to insert the needle too superficially. The subcutaneous tissues can be more easily infiltrated and less solution is required if it is injected before the skin incision is made.

Hernia. All forms of hernia can be operated on under local anæsthesia while the radical cure of inguinal hernia is the most successful major operation in the entire field of local anæsthesia, "the triumph of cocaine" (Reclus). In inguinal hernia a general anæsthetic is never indicated. In strangulation the lowered vitality and shock make cocaine a necessity to eliminate the additional shock of general narcosis; besides its allows ample time to ascertain the viability of the gut, and if resection is necessary the radical operation can be performed. Under general anæsthesia it is often only possible to establish a fistula at the first operation and do an anastomosis at a subsequent period.

The first herniotomy by the neuroregional method was performed by Cushing. The technique preferred is Bodine's modification of the Halsted operation, as recently described in detail and illustrated with forty-seven stereograms in Dr. H. A. Kelly's *Stereoclinic.*

With a one fifth per cent. solution inject the line of incision over the most prominent part of the hernia (from three to five inches) parallel with and about one half inch internal to Poupart's ligament and extending higher than is usual with general anæsthesia, at least two inches above the site of the internal ring and extending well down on the scrotum below the external ring. Be careful not to make the incision too far from Poupart's ligament or difficulty will be experienced in getting sufficient retraction to place the deep sutures, strong retraction here will cause the patient pain.

The painful areas in this operation are the skin, nerve trunks, and parietal peritonæum. The subcutaneous tissues are infiltrated and the incision carried down to the deep fascia at the upper angle of the wound. The fascia is injected, caught up with thumb forceps and carefully incised. The ilioinguinal nerve is found lying immediately beneath the external oblique aponeurosis or upon the internal oblique muscle. The nerve is infiltrated with a one fifth per cent. solution until it turns white. The iliohypogastric is found above the ilioinguinal and is also infiltrated. If the iliohypogastric is not readily found time should not be spent searching for it, as the ilioinguinal supplies nine tenths of the sensation in this region. The higher up the nerve trunks are infiltrated the more thorough will be the anæsthesia of the operative field. These nerves occasionally divide higher than the line of incision, so it is always advisable to inject all small nerves that can be found, provided the two large trunks are not readily recognized or the ilioinguinal is of small size. The incision is now completed through the subcutaneous tissues down to the external ring. Two or three veins will be encountered at the lower angle of the wound, and occasionally the superficial epigastric artery will be divided. The vessels should be exposed and clamped simultaneously on either side by operator and assistant before cutting. This gives one twinge of pain where otherwise three would be felt. No ligatures should ordinarily be used, but the bleeding controlled by twisting the vessel before the clamp is removed. Cocaine, one tenth per cent., is now infiltrated around the margin of the external ring and into the tissues over the sac in the line of incision. No more cocaine is required until the sac is ligated. The nerve trunks should never be cut, but dissected free and retracted to the inner side of the wound. The preservation of the nerve trunks lessens recurrence and prevents a subsequent relaxation of the scrotum. The patient is told to cough, the sac located, picked up with thumb forceps and freed by sharp dissection with scissors. Sharp dissection is painless, but blunt dissection with scissors or gauze pads will cause considerable discomfort and some pain. Painful swabbing of the wound should be avoided and the instruments handled quietly. Clicking of the scissors may be prevented by placing a piece of rubber tubing on one shank. Care must be exercised in separating the sac from the cord not to cut the vas deferens. If it is accidentally divided the ends may be reunited by slipping them over a piece of plain catgut and uniting with a suture on either side, as suggested by Chetwood. The sac is dissected free up to the neck, then opened and the contents returned to the abdominal cavity. If there is a large amount of omentum present a portion of it may be ligated and excised, but as this causes a certain degree of shock it should only be done in selected cases. Cocaine, one tenth per cent., is injected beyond the neck of the sac before it is ligated and excised. If the appendix is in the sac it should be removed, being careful not to make traction on its mesentery. It is not necessary to transplant the cord except in very large or recurrent hernia, although Bodine has shown that transplantation does not add to the difficulty of the operation. Suture the conjoined tendons and internal oblique to Poupart's ligament. Then the upper edge of the aponeurosis of external oblique is sutured to Poupart's ligament beneath the lower edge of the aponeurosis. The overlying edge can be sutured or left free. The sutures must not be tied too tight lest they cut out from constriction, nor placed too close together. They should be of medium size, preferably of medium kangaroo tendon or No. 2 chromic catgut. It is important to carefully exclude nerve fibres in suturing because of the liability of producing a neuritis that may persist until the suture is absorbed. Use a small gutta percha wick drain in the subcutaneous tissues for forty-eight hours where there is much fat and in large herniæ. During the entire operation the fingers of the operator or assistant should not touch the wound—the tissues and pads are handled with thumb forceps. This lessens the chance of infection.

Recurrent herniæ and those that have been subjected to the injection treatment are much more difficult to dissect out and in these cases it is necessary to prolong the incision higher than that of the previous operation so as to find the nerve trunks above the scar tissue.

In femoral hernia the nerve supply is controlled by injecting the inguinal branch of the ilioinguinal and the genital branch of the genitocrural above the field of operation.

The Mayo operation can be satisfactorily performed in umbilical hernia by simple infiltration, this is also sufficient for ventral hernia.

The addition of hyoscine to the preliminary dose of morphine relaxes the abdominal muscles and facilitates the reduction of the contents of the sac in large umbilical and ventral herniæ.

An early cathartic with an intestinal and urinary antiseptic administered while the patient is confined to his bed will prevent intestinal and bladder disturbances.

Bodine has operated in 1,114 cases of herniæ without infection and less recurrences than when he was employing general anæsthesia.

Laparotomy. Infiltration anæsthesia is sufficient for the abdominal incision. Care must be exercised that traction is not made on the parietal peritonæum or mesentery. Breaking up adhesions will usually cause some pain. The abdominal operations most frequently performed under local anæsthesia are appendectomy, cholecystotomy, exploratory for typhoid perforation and intestinal obstruction, suprapubic cystotomy, and drainage in peritonitis. Other operations that have been completed under cocaine are gastrotomy, resection of pylorus and intestine, gastroenterostomy, colostomy, ventrosuspension and fixation of the uterus, salpingooophrectomy, shortening of the round ligaments, and removal of ovarian cysts.

Cushing, in a personal communication, says he was the first to perform laparatomy under cocaine anæsthesia for typhoid perforation, September 13, 1899. He states that exploratory laparotomy with cocaine does not increase the danger to life or add to the shock already present and is without effect on the temperature, pulse and respiration.

Appendicitis. Interval cases with a history of mild attacks in a patient with a thin abdominal wall, selected cases of acute appendictis, and acute cases in which a general anæsthetic is contraindicated should be operated in under cocaine anæsthesia. Bodine believes the best method for acute cases is cocaine plus a few whiffs of nitrous oxide gas for freeing and treating the appendix.

Operations on the skull. Trephining, mastoidectomy, exploratory craniectomy, and removal of depressed fractures can be performed under cocaine. The sensation of pain is confined to the skin and periosteum. The bone, dura, and brain substance are insensitive.

Ligation of arteries. All the arteries of the extremities and neck can be ligated under local anæsthesia.

Thyreoidectomy. The collar incision should be used, simple infiltration is all that is necessary. Mitchell suggests blocking the cervical nerves at the side of the neck behind the sternomastoid to eliminate the dragging pain caused by the delivery of the gland. Wyeth and Kocher recommend cocaine for all goîtres unless strongly contraindicated. Dunhill states that operations on the thyreoid are without danger if performed under local anæsthesia.

Tracheotomy and laryngotomy. Simple infiltration is sufficient. The sensitive mucous membrane should be previously cocainized by a spray or local application as soon as the incision is made, to avoid the reflex irritability caused by the inspiration of cold air.

Cervical glands and tumors. Solitary glands and benign tumors can be removed with ease. With tuberculosis or malignant disease the deep glands must also be removed. This requires patience and gentleness in dissection. Simple infiltration is all that is necessary.

Inguinal glands. These can usually be removed *en masse* with simple infiltration.

Amputation of the breast. Simple amputation is best performed with massive infiltration anæsthesia. Cocaine is contraindicated in malignancy where the axillary glands are to be removed.

Benign tumors. These can be removed either with massive or simple infiltration.

Operations on the extremities. It is unnecessary to use a tourniquet if the weak solutions are employed and adrenalin added to prolong the analgesia. Nerve blocking was first employed by Crile in 1897, and independently suggested by Matas early in 1898 while unaware of its prior use by Crile. Matas advocates nerve blocking at a distance for all extensive operations on the extremities, although the infiltration method is sufficient in thin subjects. For operation on the forearm, wrist, and hand, the median, musculospiral, and ulnar nerves can be blocked at the elbow. For the shoulder and arm, block the brachial plexus in the supraclavicular fossa. In the lower extremity block the sciatic and long saphenous nerves below the knee. Above the knee block the sciatic, external cutaneous, and anterior crural nerves. Young was the first to cocainize the external cutaneous to obtain skin grafts from the anteroexternal surface of the thigh. All amputations can be performed under local anæsthesia. Cocainization at a distance from the operative field should be employed whenever possible in preference to infiltration at the site of operation, the cutting and handling of tissues tends to diffuse the cocaine solution and hasten the return of sensation. Dislocations and fractures can be reduced and wired by previously controlling the nerve supply. Diseased bone can be removed without difficulty if the nerve trunks and periosteum are thoroughly cocainized. Arterial and vein anæsthesia will probably be the most satisfactory as well as the most rapid methods for amputations. In dislocations, fractures, and amputations of the fingers and toes, simple infiltration, either on both sides or around the base of the digit is sufficient for complete anæsthesia.

Abscess. Braun and Hackenbruch recommend infiltrating a ring around the abscess, keeping outside the inflamed area, then injecting the subcutaneous tissues before incising.

Fractures of the patella. Simple infiltration is ample to allow an approximation of the bony surfaces and suture of the capsule and periosteum.

Varicose veins. Small varices can be easily removed under local anæsthesia, but cocaine is not usually to be recommended when the entire external and internal saphenous veins are to be removed.

Perineorrhaphy. The Hegar operation can be performed without difficulty by infiltrating around the triangular area to be denuded. After this is removed the deeper tissues are injected and the levator ani exposed on either side and sutured in the usual manner. Œdema of the vulva may follow if an excessive amount of the solution is injected. All the classical operations on the vulva, vagina, perinæum, cervix, uterus, and opening the cul-de-sac for pelvic suppuration have been accomplished under local anæsthesia.

Hæmorrhoids and fistulæ. Local anæsthesia is sufficient for all cases, but it requires a very thorough infiltration to anæsthetize all the nerves supplying this region. The hyoscine-morphine preliminary treatment, as suggested by Tuttle, is especially useful in these cases to prevent postoperative pain. Give hyoscine hydrobromate, 0.01 grain, three hours before the operation, and repeat the same dose of hyoscine combined with morphine sulphate, from ⅙ to ¼ grain, one hour before operating. When the morphine is given with both doses of hyoscine untoward symptoms as cyanosis with slow shallow breathing have been frequently observed, but do not occur when only one dose of morphine is administered. The most satisfactory infiltration technique is that suggested by Reclus: A small pledget of cotton is saturated with a weak cocaine solution and the patient requested to strain, the pledget is now introduced into the anus and the contraction of the sphincter as the patient relaxes draws the tampon up inside the sphincteric ring. This procedure is repeated with pledgets of increasing size until the sphincter is partially relaxed and the mucosa completely anæsthetized. The needle is introduced into the anæsthetized mucosa and the skin around the margin of the anus infiltrated. After cocainizing the mucocutaneous margin the index finger of the left hand is introduced into the rectum to guide the needle while cocainizing the sphincter. This step is painless if the needle is introduced at a right angle to the skin surface. Six punctures are made at æquidistant points around the circumference of the sphincter and each time about one half drachm of the solution is injected into the sphincter and surrounding tissues. The sphincter can now be painlessly and completely relaxed in a few minutes by digital dilation.

Urethrotomy. From a one fifth to one half per cent. solution is strong enough to anæsthetize the urethra. Adrenalin may be added to prolong the analgesia.

Circumcision. Retract the foreskin and anæsthetize the inner surface of the prepuce by local application of a one fifth per cent. solution. Encircle the penis near the base with a series of small wheals, only injecting the skin. The skin beyond the ring of infiltration will be completely anæsthetized in from five to ten minutes. Inject a few drops of the solution into the frenum before proceeding with the operation. The advantages of this technique are: It permits of an accurate approximation of the edges of the wound. The healing is more prompt. There is no œdema and less scar tissue after healing, especially if the scarlet red dressing is employed.

Varicocele. The high incision at the upper part of the scrotum just below the external ring is to be preferred. After the skin is injected the subcutaneous tissues are infiltrated freely before incising. It is not necessary to look for the nerve trunks, although it is important not to cut them or a relaxation of the scrotum may follow the operation. A small amount of cocaine is injected above the upper ligature before tying. It should always be tied and cut before the lower, so as to give but one twinge of pain.

Hydrocele. If the injection method is used, infiltrate at the point where the trocar is to be inserted and inject a small quantity of one half per cent. previous to the carbolic acid. For the radical operation simple infiltration can be used, or block the inguinal branch of the ilioinguinal through the high incision.

Operations on the testes, epididymis, and vas. If the high incision is employed it is only necessary to block the inguinal branch of the ilioinguinal. At the lower part of the scrotum the genital branch of genitocrural will be encountered.

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THE DETERMINATION OF THE DOSE OF STOVAINE IN SPINAL ANÆSTHESIA BY BLOOD PRESSURE OBSERVATIONS.

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The fascinating subject of spinal anæsthesia by stovaine, cocaine, etc., is engaging the earnest attention of prominent surgeons the world over, and this method of producing analgesia is coming into more extensive use every day. Recent as its introduction has been its effects and dangers have been extensively studied by many careful observers so that to-day we are able to administer it with such comparative safety that the mortality from this method has become extremely low. With the view of still better realizing the ætiology of its dangers and combating untoward symptoms by rational therapeutics has been the object of this study. To what extent success has been attained the writer prefers the reader to decide.

The earlier surgeons who employed this method of analgesia were careful least the anæsthetic should rise higher up and by reaching the vital centres cause death. To overcome this disadvantage the specific gravity of the spinal fluid was taken into consideration, in this manner the anæsthetic was kept at a certain level. It has been shown that injections higher up can be given under certain conditions with very little risk. It is fairly certain that at least one source of danger is the dose of the drug which is injected into the spinal column at one time. The questions naturally suggest themselves: Can the dose be accurately and scientifically gauged for each individual case? What are the factors which must be taken into consideration? Evidently if such can be done it is of great importance for it is perfectly obvious that the dose for one individual may be too small or too large for another. It has been found that the changes which take place in blood pressure during spinal anæsthesia are very marked and important. There is a marked fall of blood pressure, and this to a certain extent bears some relation to the amount of drug used and the level at which it is injected. That the dose can be gauged by the blood pressure readings at once becomes evident if we but reflect for a moment upon the mechanism concerned in the maintenance and regulation of normal blood pressure.

One of the most important factors concerned in the maintenance and regulation of normal blood pressure is the continuous activity of the vasomotor system whose centre is located in the medulla. It is hardly necessary to go into a detailed discussion of this vital centre. Suffice it to say that by the continued activity of the vasomotor system through its vasoconstrictor fibres the blood vessels are kept in a condition which we designate as tone. The calibre of the vessels is regulated and therefore the size of the vascular bed.

The factors which have an important bearing upon the subject in hand are the sensory fibres which carry their impulses to the centre and through which its activity is either increased or diminished. They have been divided into two classes according to the nature of the impulses which they carry. The pressor fibres cause a stimulation of the vasomotor system and a consequent rise in arterial pressure; while on the other hand the depressor fibres cause a diminution in its activity and a fall in blood pressure. It is through both sets of fibres that impulses are being continually received from every part of the body making the vasomotor system a mechanism highly susceptible to reflex stimulation. This is indeed admirably illustrated by the act of blushing.

The activity of the vasomotor system is not only influenced directly by the impulses received but a cessation of impulses from the pressor fibres will have the effect of making the depressor impulses more prominent causing a fall in blood pressure and vice versa. It is upon this important fact that, I believe, we can regulate the dose of anæsthetic to be employed by taking into consideration the blood pressure findings.

It must be evident to all that if the activity of the vasomotor system is already diminished and there is low blood pressure—defective tension—we can ill afford to cut off pressor influences as we must necessarily do when the anæsthetic is injected.

The average dose of the anæsthetic given to an individual of the average size and weight is about six milligrammes.[1] The mean pressure in such individual is about 120 mm. Hg. It must, therefore, be evident that as a usual thing we inject about one thirtieth milligramme of the anæsthetic for each mm. Hg. of pressure. If we are to base our blood pressure findings on the unit system (see Standardization of Blood Pressure, *New York Medical* Journal, September 24, 1910), then the determination of the dose can also be obtained in the same way; i. e.—If the normal blood pressure, as expressed in terms of units, is 48, then it is apparent that we inject about ⅛ milligramme for every unit of pressure.

Such being the case it is but a simple mathematical problem to compute the dose for each individual case.

1625 SOUTH FIFTEENTH STREET.

TONSIL GRASPING FORCEPS.

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The position which the faucial tonsil occupies between the palatopharyngeus and palatoglossal muscles varies greatly. Hypertrophied tonsils are seen occasionally projecting so far into the pharynx and mouth that little trouble is experienced in grasping the capsule itself by most of the tonsil forceps on the market. However, in the great majority of cases, these diseased structures are submerged, atrophic, adherent to the pillars of the palate, and do not project sufficiently between the pillars that a hold, for the necessary traction, can be taken upon the capsule by ordinary forceps. The tonsil capsule terminates near the edge of the pillars, and behind the part projecting into the buccal cavity where there is nothing but soft lymphatic tissue. The capsule varies from one quarter to one millimetre in thickness, is tough, of a fibrous nature, and not easily torn, being therefore the ideal part for traction. The tonsil space varies in width from eight to fourteen millimetres inferiorly, the palatopharyngeal and glossal folds coming together superiorly make the greatest possible width for insertion of grasping forceps from two to four millimetres at this point. Most of the forceps in use are from five to eight millimetres in width, precluding a grasp of the tonsil in the superior tonsillar fossa, in which lies the part of the tonsil (the "velar" tonsil) most necessary for removal. Nearly all the grasping forceps heretofore designed are of such a nature that unless the tonsil itself is fibrous or unusually prominent its tissue will readily be torn by their grasp, making it impossible to remove the tonsil intact.

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[1] Stovaine, 0.05 gramme; novocaine, 0.08 gramme; tropocaine, 0.6 gramme; etc.

A prominent tonsil, one that is submerged, or a stump, may be removed with greater facility, less danger to the surrounding structures, and a thorough enucleation in the capsule if the traction instrument allows drawing the tonsil away from the connective tissue intervening between the capsule and the superior constrictor. The operator is thus enabled to encircle the capsule with greater ease, than if no traction is made.

Description of instrument and method of operation. The author's instrument is the three catch locking device, arranged so that greatly hypertrophied tonsils as well as the submerged forms and stumps, when once accurately engaged, may be securely held. For very large tonsils the instrument is caught at the first lock, the second being used for securing the smaller hypertrophies and stumps left from previous amputations, as well as in grasping the submerged type. The middle branch or tooth of each blade is seven millimetres longer than the lateral blades, and projects inward two millimetres more than the outer teeth. This allows the operator to insert the middle tooth into the supratonsillar fossa, thus engaging the tonsil by its capsule. Traction is then made upon the tonsil toward the median line, the palatopharyngeal and palatoglossal folds slipping over the tonsil; then pressure being made upon the handles, the outside teeth engage and the catch securely locks the instrument, raising the tonsil from its bed. The lateral teeth of the instrument do not engage the capsule until the traction that is made draws the tonsil well out into the fauces, then the instrument being further closed the lateral teeth will catch in the tonsil capsule and not in the pillars of the palate, which has been the principal drawback to the older form of tonsil volsella.

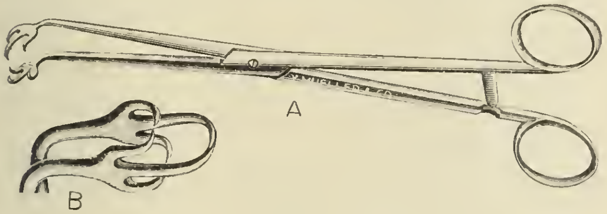

FIG. 1.—MacWhinnie's tonsil forceps.

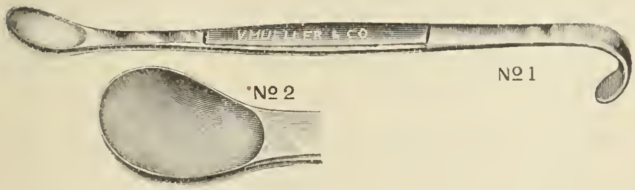

FIG. 2.—MacWhinnie's tonsil spoon.

The balance of the procedure from this point on will vary with the operator, the operation being completed with the finger or spoon, both of which are preferred by the author, to the snare and scissors method used by other operators.

Twisting the tonsil upon its attachment to the connective tissue after the pillars have been separated by the finger greatly reduces the loss of blood. By this procedure the blood supply is shut off, and the result is a materially lessened hæmorrhage.

411-414 WHITE BUILDING.

WHAT IS THE DIRECT CAUSE OF THE SEIZURES OF EPILEPSY?

A Plausible Explanation: and a Suggestion as to the Possibility of the Surgical Treatment of Epilepsy.

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I am not a neurologist, but count myself with the great horde of general practitioners. I plead this in extenuation for the incompleteness in some respects of the present article. Did I have the resources and opportunities of a metropolitan nerve specialist, I would not have thought of publishing an original paper upon so important a subject as epilepsy unless I had first given my theories a thorough test in practice, and had looked up the literature upon the subject in full. As it is, under my present limitations, I must be content to offer my theory to the profession in somewhat imperfect form; hoping that some brother practitioners with greater opportunities in this field than I have, will take it up and give it a "try out." I believe that the conclusions advanced here are original; but so vast is the field of modern medical literature that I cannot claim to be certain on this score.

Epilepsy is generally classified in the textbooks under the heading of functional diseases of the nervous system. By a functional disease, we mean one whose anatomical and pathological basis is unknown. We do not know the anatomicopathological basis of epilepsy, though we are unanimous in the belief that it is to be sought in the brain. Granting then that pathological changes do occur in the brain of epileptics we are forced to the conclusion that these changes, whatever they are, must be exceedingly transitory, appearing and disappearing with the epileptic seizure; for post mortem observation upon epileptics, unless the cases had been of long standing and degenerative changes had set in, has failed to demonstrate any brain lesions sufficient to explain the symptoms.

The question is now thrust upon us: What are these transitory pathological changes, occurring during each epileptic attack? In this dilemma we appeal to the principles of general pathology. These teach us that there is but one kind of pathological change that is strictly transitory, that comes and goes like lightning, and leaves no trace behind it—and that is circulatory disturbance. We therefore conclude that whatever the underlying predisposing cause of epilepsy may be, neuropathic heredity or anything else, the direct exciting cause of each epileptic fit is circulatory disturbance in the brain. But what is the nature of this circulatory disturbance? Perhaps analogies with similar changes occurring in other tissues, may help us to gain an understanding of this matter.

There is a class of affections occurring in different parts of the body characterized by attacks, sudden in their onset, and equally sudden in their disappearance. This class includes such varying conditions as asthma, hay fever, angioneurotic œdema, urticaria, and as Strümpell would have it, colica mucosa. These conditions are all manifestations of what the Germans call the "exudative diathesis." These affections are the result of angioneurotic phenomena, which are brought on by a constitutional irritability of the nervous system—neuropathic heredity if you will.

Now I take it that vascular phenomena precisely similar to those occurring in asthma, or angioneurotic œdema, occur in the brain with each epileptic seizure. If sudden exudations can occur from the vessels of the skin, bronchi, intestines, why should they not occur in the viscera, in the brain. The violent symptoms occurring during an epileptic fit are explained by the sudden increase in the intracranial pressure entailed by this exudation within the rigid unyielding walls of the skull. As soon as the pressure within the cranium has readjusted itself the symptoms will pass off.

To support my contention for the inclusion of epilepsy within the class of angioneurotic affections various facts may be brought forth. It in common with the other manifestations of the exudative diathesis has a constitutional irritability of the nervous system as its principal ætiological factor. Just as attacks of bronchial asthma have been sometimes associated with urticaria, or angioneurotic œdema of the hands or feet; or have been known to alternate with attacks of hay fever; so attacks of epilepsy have been known to alternate with attacks of bronchial asthma—as stated by Salter. Furthermore the premonitory symptoms which usher in some attacks of asthma are essentially the same as the aurae of epilepsy. Oliver (*Philadelphia Medical Journal*, January 14, 1899) cites a case where urticarial eruptions were due to eyestrain, persisting or recurring when a change of lenses was necessary. Now eyestrain is often given as the exciting cause, sometimes, of epileptic seizures. Significant is the fact noted by Fere and Frank, and Church, that an increase of arterial tension occurs before an epileptic attack. I do not know whether any observations have been made upon the eye fundus during epileptic seizures. Such observations might possibly throw valuable light upon the subject.

Since according to this theory each epileptic seizure is associated with an increase of intracranial tension it has occurred to me that possibly a decompression operation as practised by Cushing, would be of service in this disease. To remove a good section of the cranial vault is such a simple procedure that it is worth trying on many epileptics. By removing a portion of the unyielding skull and substituting instead an expansile diaphragm in the shape of the scalp we will allow of quicker adjustment of intracranial tension, and thus, perhaps, diminish the frequency or severity of epileptic seizures.

REVERIES OF A YOUNG PRACTITIONER.*

By F. McKelvey Bell, M. D.,
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There has always been a lurking suspicion within my heart—or in whatever portion of one's anatomy suspicions are supposed to lurk—that these lines would never be written, that I should be spared the travail of composition and, what is more important, that you should be spared the ordeal of listening, and yet an unkind fate has willed it otherwise, and we must both shoulder the yoke.

I believe, too, that a more fitting title would be: The Idle Thoughts of an Idle Fellow, but it is unwise strolling so perilously near the truth, even in jest: and, too, the young practitioner can hardly be termed an idle fellow, for work is the keynote of his life, the *sine qua non* of his existence. He has an insatiable longing for it—an appetite but ill appeased in the early days, nor gorged in the full in later ones.

The conquest of disease comes not by intuition but by earnest labor. The road to success lies through the dense forests of study and work. At times obstacles which look insurmountable obstruct the path, and if we are weak or lackadaisical, when this does occur we are prone to call loudly for assistance and to stand idly by while one more assiduous, though perhaps no more astute than ourselves hews a path of ease for us—at our expense. Personal endeavor and self reliance would ofttimes assist us over the difficulty without throwing the burden of labor or the mantle of success upon other shoulders.

Reticence, indecision, and lack of self confidence are three of the greatest obstacles to success, and it is these failings which are wont to make the young practitioner seek paths of ease and irresponsibility. Just as long as we shirk responsibility, so long shall we remain nonentities in the medical world.

Surely on a night such as this when no importunate patient is likely to break the thread of our waking dream some brilliant thought should emanate from its weary resting place and stand forth in all the glory of a premature manhood. Some recollection of bygone days or aspiration for the days to come. The panorama of life moves slowly before our dreaming eyes, the buoyant hopes of youth, the arduous labors of midlife, and the hazy reminiscences of old age.

Standing as some of us do upon the threshold between youth and middle age, it is not difficult for us to look backward through the telescope of former days, nor to peer curiously at the horoscope of the days to come. And looking backward we see ourselves young, inexperienced but hopeful, launching our little bark upon the perilous professional sea, ready and willing to sail with a fair wind yet equally determined to cope with the inevitable storms.

With what care and pride we select our little office and with what assiduity we see to it that our not too modest sign boards occupy the conspicuous foreground. We feel that this circumstance alone entitles us to a passing notice—and so it does, it is the only form of notice we do attract, for as we sit by the window and watch the moving throng, each and every one appears to be seized with a fit of temporary abstraction (no other variety, worse luck!) just as they pass the door. Loth should we be to impugn their sense of discernment or discrimination and yet we cannot help but feel that there is an unaccountable lack of enthusiasm whenever they glance our way. They pass us by with a dogged persistence which to say the least is not flattering to our collegiate vanity nor reconcilable to our own ideas of our worth.

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*Read before the Ottawa Medical Society, March 11, 1910.

Ah, these dreary days of waiting, long dismal diurnal periods punctuated solely by collectors and insurance agents. We have no money for the former and neither money or patience for the latter, and yet a thrill of speculative delight passes through our being at every surreptitious ring—a delight soon replaced by a corresponding depression. But at last we have a patient—bless his kindly heart! What matter that he is a tattered member of the proletariat? What reck we that his financial is obviously worse than his physical condition? He is a real *live* patient and we mentally resolve that we will keep him thus. But what a strange complication of diseases he seems to have! We are quite distressed about him. Symptom upon symptom he pours into our willing ears with a volubility and accuracy quite astounding. True it is a heterogenous mixture, but that makes it all the more interesting. We feel that we are upon the brink of a discovery—a hitherto unheard of disease, one embodying the phenomena of many, a *multum in parvo* that might have made Hippocrates weep or Sydenham smile. We gaze at our patient (how delicious the word to our long suffering ears!) Let us repeat it! We gaze at our patient in wonder not unmixed with awe and marvel at the constitution which can withstand so much yet show so little outward evidence. True he has had a chill—a very slight one he modestly informs us. Pains of erratic and inconstant character in various parts of the body—vagrant pains one might call them, pains of a peripatetic propensity, having no fixed abode, but wandering about the body at will. Headache? Oh, yes, decidedly. Constipation? Yes, yes! He seems pleased to acknowledge this, as though a moderate amount of constipation was a desideratum. Vertigo? The room has been swimming about like a young tadpole. Temperature and pulse normal. We feel hurt and disappointed about this. Somehow we think that the fortunate possessor of so many other interesting symptoms should not have failed us in this respect, but he *has*, nevertheless, and we swallow our chagrin as gracefully as the heinousness of his crime admits. The physical examination and uranalysis reveal nothing, and at last, after much cogitation and heavy thought, we are forced to admit to ourself—to no other, mark you!—that we are face to face with that intangible, elusive and exasperating condition: Neurasthenia. Let us draw a friendly veil over the treatment—the less said of it the better. Suffice it to say the patient survived it and the subsequent treatment of a host of others. *Sic transit gloria mundi.*

All medicine is a friendly rivalry, but it is none the less a strenuous one, and like all labors, commercial or professional, is in the end a survival of the fittest. If we think that our years of study at college have welded our armor so that it shall be impregnable, let us remember, too, that the rust of disuse will make holes in the shield which will require constant mending and that new instruments of warfare are constantly coming into use without which we shall be in danger of falling in the struggle.

Of course the book agent keeps dinning this so constantly into our ears, with whatever poetic variations his exuberant fancy may suggest that we are not likely to forget it and incidentally we are liable to be led astray and subscribe for numerous books and monthly periodicals neither essential to our welfare nor formally approved by Æsculapius. Far be it from me condemning the standard medical journals, but there are so many pseudojournals on the market that under the spell of agent oratory one is liable to subscribe "not wisely, but too well." We have all been, and shall all once more, be victimized. Once, years ago (How that "years ago" seems to excuse one!) I was tempted and fell. I subscribed. Don't think for a moment I ever intended to read the journal—no one else does—but it looks learned and bookish to have a few lying about when one's medical friends come to call; as if one were groping about in the far unknown or digging in the deepest wells of science.

How often, too, have I sat in an older physician's office and admired the high piles of medical journals almost buried in the dust of ages! There was an odor of learning about the very dust that made one respect it, and I am sure I would not be the guilty one to disturb its senile sanctity. Ah, who knows! Perhaps some day we, too, shall have an antique collection of our own, hidden away in some long forgotten corner gathering cobwebs and hoary respectability. But one day, my star of ill luck being in the ascendant, weary with futile waiting for imaginary patients, I picked up a copy of this wretched journal and imbibed the following lucid article:—An Instant Cure for Earache. Make a cone of stiff paper, place it in the auditory canal and insert a plug of absorbent cotton, saturated with choloroform. The pain will disappear instantly. Ah. Immature Ananias! With reasonable effort thou shalt wrest the crown from Dr. Cook. But let us not anticipate. Any of my confrères who care to try this simple remedy will be astonished at the results—I was!! Not long after the absorption of this piece of medical wisdom, as if by some decree of fate, a young woman tripped into my office and announced that she had been suffering for hours with the most dreadful earache. Here was an opportunity not to be despised. Alas, poor girl! I knew her well. Two minutes later she was dancing about the office like mad. Hers was no sailor's hornpipe or Highland fling, but a grave weird sort of Indian war dance that made one's flesh creep. At each revolution the miniature aural megaphone could be seen sticking straight out of the auditory canal and, judging by appearances, the "instant cure" was doing great execution. I implored her to be patient, that she would be quite well in a moment, and although the poor girl hesitated to doubt my veracity and struggled bravely against conviction, it was plain to the naked eye that the earache had paled into insignificance before this megaphonic ache. Finally she said if it made no material difference to me she would prefer the original earache.

All of which goes to show that we should not place implicit confidence in the sure cure of every ambitious medico who frequents the monthly journal. What many of the present day medical journals need is a thorough editorial purge and there would then be less danger of autointoxication through accumulation of putrefactive literary matter.

The years move quickly and anon we are in the throes of a busy practice. Calls have ceased to surprise us. They have become almost a matter of course and at times we even have the temerity to refuse a case because the patient has failed to accost us in the orthodox manner or has had the audacity to ask us to officiate at the natal début of his tiny daughter without having first apprised us of the felicitous expectation. For with advancing years and increasing cares we have appropriated a share of dignity as well as a mediocrity of filthy, but thrice welcome, lucre; the former usually apportioned in direct ratio to the latter. And this "dignitas neonatorum" of ours must not be ruffled—or woe betide the ruffler;—it is new now and bright and we must keep it well polished lest it become indiscernible.

Yet let no one think that we are lost to sentiment. We are, I trust, still ready and willing to hearken to the cry of poverty or distress and ever quick to lend a helping hand when Charity calls. But alas, how often are our patients uncharitable to us—and with a moral parsimony far harder to bear than a mere loss of monetary help. May they remember that for every unkind action they direct against their physician they are binding his great heart about with steel bands which in times of apparent distress may be slow to relax.

And it is against this hardening process, induced by oft repeated acts of base ingratitude, that we must constantly struggle, remembering always that for every charitable act well meant, there will surely be an adequate reward—and not alone a spiritual one—regardless of the thankless attitude of some stray members of the "hoi polloi."

How often we attribute success to personality or to personal magnetism—whatever that indefinite quality may be—forgetting that many factors enter into the process.

On following the records of the men who have succeeded we never fail to find that earnest and laborious work was always coincident with these other virtues, and it seems a reasonable conclusion that the man who lacks personal magnetism but who is well versed in his profession is far more likely to succeed than the possessor of an attractive personality who lacks a comprehensive knowledge of his work.

Nor shall we envy the genius who seems to attain success without effort—who is carried onward and upward upon an irresistible wave. Far sweeter to us to think that all the accomplishments, all the meteoric advances of geniuses, those men of unilateral development who bulge forth in one place only to leave a corresponding depression in another, would inevitably have been equalled in due time by the aggregate labors of the average earnest plodder.

All Nature works and is ennobled thereby, from the daily revolutions of our Mother Earth all the way down to the diurnal excursions of the meanest staphylococcus and shall we be outdone by the least of these? May we ever bear in mind the potent advice of Carlyle:—"Wheresoever thou findest disorder, there is thine eternal enemy: attack him swiftly, subdue him, make order of him."

But the years roll on with unbidden haste and before we realize it we are old and gray, old in years but young at heart, for our constant sympathetic intercourse with humanity has kept the fountain of youth from congealing and a wholesome pity for human ills has wrapped the soul in robes of unchangeable verdance. The old order has given place to the new, and the old drugs which we have used and respected for a decade are ruthlessly cast aside by incoming generations. Dear old calomel, pride of our youth, faithful friend of our manhood and deity of our declining years is thrust away, while some new but temporary monarch usurps the throne, calls himself King Phenolphthalein and hopes through a solitary virtue to replace him of countless ones. What recks he if his reign be short, if it be not so memorable as that of his predecessors! He has been king for a day and he is content. The youthful medical world pursues its elusive ideal with feverish haste, concoction after concoction is thrust upon it in endless confusion. The old beaten paths are forsaken and the young physician finds himself in a chaotic labyrinth of nostrums from which he slowly frees himself to find once more the good old paths his fathers trod and to which he must ever return.

Meanwhile the old practitioner sits kindly silent and smiles knowingly but indulgently at the overexuberance of youth. He knows that his young confrère must pass through the fire of experience and work out his own salvation, he knows, too, that out of this chaos into which he has unwittingly run he will ultimately extricate himself and join the ranks of the men who came, who saw, and who conquered.

400 McLeod Street.

Therapeutical Notes.

A Combined Quinine and Hydropathic Treatment of Whooping Cough.—This is the title of an article contributed by Theodore Zangger to the *British Medical Journal* for October 15, 1910. To combat the infective factor in whooping cough the author uses quinine in the form of a one to two per cent. solution of hydrochloride in doses of two and one half fluid drachms administered at 8 a. m., 2 p. m., and 6 p. m.; in severe cases also at 11 a. m. The one per cent. solution can easily be administered diluted with milk or water to children under one year of age. For older cases he also prefers this preparation of quinine, but the objection of the patients and relatives to its bitter taste is great. He has therefore substituted a preparation called euquinine, which can be administered in powders of two to four grains three or four times a day, according to the age of the child. Euquinine has the advantage over quinine hydrochloride in being almost nonirritative for the mucous membrane of the stomach, which is of great importance.

To influence the neurotic element of the disease, which is most distressing and wearisome in the convulsive stage, the author has given up narcotics and bromides in favor of simple hydropathic "packs," which he says have a most sedative influence on the nervous system. Their application may be shortly described as follows: Spread a child's blanket crossways over a bed, lay on it a sheet, once doubled, and soaked in tepid water of 54 (or even 52) to 60° F., and well wrung out. Lay the patient on this sheet and wrap him in it; the wet pack must reach from the armpits to the knees, and be well covered by the blanket. The latter is fastened with safety pins, but not so tightly that the patient cannot sit up when a convulsive attack comes on. These packs Dr. Zangger has applied at 6 p. m. or 7 p. m., and renewed at about 10 p. m. and left till the morning.

In cases where the cough was especially distressing, later on in the night, he has had them applied at 9 or 10 p. m., and removed two to three hours later, when the first convulsive whoops again supervene. The attendants are invariably most happy to make these applications, as they ensure a better night, not only for the patients but also for themselves.

The Local Treatment of Chilblains.—E. Graham Little, in the *Practitioner* for October, 1910, recommends the following local treatment of chilblains:

Immersion of the parts once or twice a day in warm water, with subsequent gentle friction with camphorated alcohol; powdering the parts with the following:

℞	Starch,	ʒii;
	Bismuth salicylate,	gr. xv.

If the sense of burning and pain is not relieved by these means, occlusive dressings with zinc ointment or Lassar's paste, ichthyolated if required, may be used.

When vesication has taken place, and the vesicles have burst, there is often contamination of the broken surface with extraneous organisms, which may produce much local inflammation. These must be checked by antiseptic lotions, of which solution of hydrogen dioxide is one of the best. Dr. Little has also used with benefit fomentations of chinosol (1 in 200 to 1 in 400). If there is no suppuration, carron oil dressings, or a mixture of wool fat, petrolatum, and almond oil, equal parts, may be used. The following is an analgetic ointment used by Bodin:

℞	Boric acid,	gr. xv;
	Morphine hydrochloride,	gr. iss;
	Zinc oxide,	gr. xv;
	Petrolatum,	ʒiv.

M.

Chilblains may be confounded with lupus erythematosus, which frequently attacks the hands but is seldom confined to that situation; true lupus erythematosus is further very liable to supervene in cases with chilblain circulation, a fact which has originated Hutchinson's term of "chilblain lupus." There is no vesication with lupus erythematosus; it is uncommon in young people who are the chief victims of chilblains; there is no retrogression of the eruption in warm weather, such as takes place in chilblains, and finally there will almost certainly be other patches of lupus erythematosus elsewhere.

The Treatment of Common Furuncle.—According to Hunter, cited in the *Journal de medécine de Paris* for October 5, good results have been obtained in the treatment of common furuncle by the application of the following ointment on pads of absorbent cottton:

℞	Carbolic acid	gr. xlv to ʒiss;
	Fluid extract of ergot,	ʒi to ʒii;
	Pulverized starch,	ʒii;
	Zinc oxide,	ʒii;
	Petrolatum,	℥i.

M.

If pus makes its appearance following this application, the surface is cleansed and a fresh dressing of ointment is applied. Frequently the furuncle is aborted and subsides without suppuration; in other cases the furuncle comes to a head and breaks very quickly.

The Treatment of Ulcus Molle.—J. E. R. McDonagh (*The Practitioner*, November, 1910) says soft chancre is best treated by cauterization with pure carbolic acid, and then dusting on the following powder:

℞	Calomel,	gr. x;
	Zinc oxide,	gr. xx;
	Talc,	ʒi;
	Starch,	ad ℥i.

M. ft. pulv.

The Treatment of Chronic Pharyngitis.—Hicguet in *Polyclinique de Bruxelles* for April 15, 1910, advances the theory that pharyngitis is not a self generative disease, but is dependent on other conditions, such as alcoholism, nicotinism, etc. In most cases attention to faulty nasal conditions will lead to a cure. So where chronic rhinitis exists he prescribes the application, four times a day, of the following ointment:

℞	Menthol,	gr. ¾;
	Chloretone,	ʒiiss;
	Cocaine hydrochloride,	ʒv;
	Simple ointment,	℥i.

M.

[These seem excessive doses of both chloretone and cocaine hydrochloride, and they might well be modified, in our opinion.—THE ABSTRACTOR.]

In the case of working people who leave their homes in the morning to return at night, the author prescribes the following powder:

℞	Menthol,	gr. iss;
	Chloretone,	ʒv;
	Cocaine hydrochloride,	ʒvi;
	Pulverized boric acid,	℥i;
	Sugar of milk,	ʒiiss

M.

If the throat symptoms are bad he prescribes a gargle, as follows:

℞	Potassium chlorate,	℥iss;
	Sodium bicarbonate,	℥iss;
	Oil of peppermint,	gtt. v.

M. et Sig.: One teaspoonful dissolved in a glassful of lukewarm water to be used as a gargle six times a day.

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THE CRIMINAL INSANE.

At the last annual meeting of the American Medico-Psychological Association an important paper, entitled Methods of Dealing with the Criminal Insane—Defects in Present Methods and Suggested Remedies, was presented by Dr. Austin Flint, of New York, and is published in the October number of the *American Journal of Insanity.* It seems that during the fifty years of its existence, up to 1909, the Matteawan (N. Y.) State Hospital, an institution devoted exclusively to the criminal insane, had received 3,160 patients. Of this number, 313 had been indicted for homicide and 598 for burglary, so that a large proportion of the total number committed or transferred to Matteawan were more or less dangerous to the public peace and safety, and it costs the people of the State of New York about $250,000 a year for protecting themselves against crimes by these insane.

The average number of inmates of the Matteawan Hospital for the year 1908-1909 was a fraction above 755, its normal capacity being 550. It is therefore seriously overcrowded, but Dr. Flint thinks that this condition is in a measure remediable. He remarks that, while a reduction of the number of convicts seems impracticable, the class of "unconvicted," from twenty-five to fifty per cent. of the whole number of inmates, includes many who might properly be returned to the courts for trial. Matteawan is used for the purpose of holding in custody and caring for such insane persons as may be committed to it by courts of criminal jurisdiction, persons transferred to it by the State Commission in Lunacy, such convicted persons as may be declared insane while undergoing sentence of one year or less or for a misdemeanor at any of the various penal institutions of the State, and all female convicts who become insane while undergoing sentence. At the Dannemora Hospital, also for the custody and care of insane convicts, the conditions are simpler; inmates who recover are returned to prison to serve out their terms, and those whose sentences have expired are retained so long as they continue insane or may be transferred, by order of the State Commission in Lunacy, to any of the so called civil hospitals.

It is Dr. Flint's opinion that when an alleged lunatic is committed by a court there should accompany the order a complete medical history of the case, to be incorporated in the case book. He thinks also that when a person indicted for crime, but adjudged to be incapable of understanding the proceeding of a trial or making his defense, or when a person who has been acquitted on the ground of insanity, but it is deemed by the court that his immediate discharge would be dangerous to the public peace or safety, is committed to a State hospital, the court should direct that the medical record of such person be sent to the hospital, and that the superintendent of the hospital be required to report to the court upon the person's mental condition within six months and at intervals not longer than six months thereafter.

A slight addition to §658 of the *Code of Criminal Procedure,* making it mandatory for a court to "inquire into and determine the mental condition of the defendant" at the outset of the trial, as an alternative to appointing a commission to make such an inquiry, would often, Dr. Flint thinks, forestall long and expensive trials. Such a provision, he says, "would render less frequent frivolous pleas for not guilty by reason of insanity; for a plea of not guilty, qualified only by the specification of insanity, is an indirect admission of the crime."

Dr. Flint next takes up the scandalous frequency with which the criminal insane may now resort to habeas corpus proceedings for the purpose of inquiring into their alleged return to sanity. He would remedy this by the following requirement: "After one such proceeding, upon which it has been determined that the relator is still insane, he shall not be entitled to another such writ within a period of one year, except for cause shown and in the discretion of the judge to whom the application is made." He would also provide that when an indicted person has been committed to a lunatic asylum pending his return to sanity, the indictment shall not be dismissed during the person's retention in the asylum, but only, in case he should have become sane, after he has been redelivered to the sheriff, either on a certificate by the superintendent of the asylum that he has become sane or under a writ of habeas corpus; but when the person is under indictment for an offense punishable by death, the indictment may be dismissed upon presentation to a court of competent jurisdiction, in the county in which the indictment was found, of a verified statement of the superintendent of the asylum that he is incurably insane and an affidavit by the district attorney of the said county that he believes the defendant could not be convicted of the crime charged in the indictment or of any degree of murder or manslaughter.

He who should undertake to deal adequately with our mismanagement of the criminal insane would need to write at least a volume. Dr. Flint has made no such attempt, but he has shed needed light, we think, upon several of its salient points, and we must say that his recommendations seem to us reasonable and susceptible of being carried out in practice without prejudice to anybody's constitutional rights.

"606" IN PARIS.

At a recent meeting, on October 14th, of the Société médicale des hôpitaux de Paris a long discussion as to the clinical results of "606" was held. Jeanselme, Laignel-Lavastine, and Touraine had treated fifty patients, with doses varying from 45 to 65 centigrammes, and had never encountered any phenomena of intoxication. An injection into the gluteal region gave rise to rather severe pain, which frequently extended down the entire limb. For several days the buttock was tense and pasty, rendering walking difficult. They had also met with morbilliform erythema, either at the point of the injection or some distance from it. The temperature was almost always raised for three or four days. On the day after the injection they found that very frequently there was a turgescence of the chancre and the neighboring tissues and the roseola took on a papular aspect. But these phenomena were ephemeral and soon the syphilides regressed, with the greater rapidity the more marked the infiltration. Hypertrophic mucous patches rapidly dried and became covered with epidermis in a few days, and the papular syphilides and acneiform syphilides, which were so rebellious to mercury, disappeared in about two weeks. The headache subsided in from one to four days. A single injection was quite enough to dry moist mucous patches and, consequently, thus considerably diminished the risk of contamination, so that from the viewpoint of social prophylaxis there was an added interest to this new drug.

Jacquet reported three cases. In one case of specific glossitis the objective results were insignificant. In another patient "606" produced a very rapid regression of a tertiary labial tumidity. An alcoholic man, fifty-three years of age, who for several years had been suffering from gastric disturbances and who came to the hospital for a very large ulcerating syphiloma of the thigh, received 50 centigrammes of "606" in the gluteal region, and on the fourth day the gumma was dry and the epidermis developing rapidly, but on the seventh day severe hæmatemesis occurred several times and the patient died twelve days after the injection. Autopsy showed a callous gastric ulcer which had previously never given rise to a hæmorrhage. Jacquet believes that in this case death was the result of the vasodilating action of "606" and that gastric ulcers must, therefore, be considered as still another contraindication of the use of this drug. He is also of the opinion that it is dangerous and that syphilis in itself is an affection the gravity of which has been considerably exaggerated. He believes that tertiary syphilomata are almost always produced or kept up by some irritative process, and that if this is done away with the lesion will disappear without any specific treatment.

Milian had employed "606" in 130 cases without any death or appreciable toxic accident, in spite of the fact that he had sometimes employed doses as high as 70 to 80 centigrammes. He does not think that the drug presents any danger for the kidney, and in one case of very severe syphilitic nephritis it produced a very remarkable improvement. The local accidents can be avoided by employing a careful technique and pushing the needle directly into the muscular mass. Pain will vary in intensity according to the subject, but he prefers to inject in the lumbar region in order to avoid preventing the patient from walking.

Milian referred to three cases where the secondary symptoms, having resisted a very intense mercurial treatment, disappeared in a few days after an injection of "606." Such was the case of a medical student that he had treated for eighteen months uninterruptedly with mercury, but who, nevertheless, presented rebellious cutaneous and mucous secondary syphilis, fulgurating pains, and loss of the patellar reflex. On October 1st he was given 60 centigrammes of "606" in the buttock and on the 14th all the accidents had disappeared and the patellar reflexes had returned. The Wassermann reaction disappeared rapidly after the treatment, but as yet sufficient time had not elapsed for one to discuss the question of relapses. Netter has observed the same surprising results in children. He is of the opinion that the contraindications of "606" are less numerous than Ehrlich believes, particularly in what concerns certain affections of the nervous system. It would appear that the society as a whole was very favorably impressed with the clinical results obtained thus far.

THE NEW VOLUME OF THE INDEX CATALOGUE.

The fifteenth volume of the second series of the *Index Catalogue of the Library of the Surgeon General's Office, United States Army,* has just been issued. It carries the vocabulary from S to Skin Grafting and contains the sixth addition to the alphabetical list of abbreviations of titles of medical periodicals published in the ninth volume of the second series, making a volume of 8 and 777 pages. It is needless to say that it shows the accuracy and clearness of the preceding volumes of this great work.

ALTITUDE AND HÆMOPTYSIS.

In the *Public Health Reports* for October 7th, Passed Assistant Surgeon F. C. Smith, of the United States Public Health and Marine Hospital Service, analyzes the fifty-six deaths directly attributable to hæmoptysis that have occurred in the Marine Hospital Sanatorium at Fort Stanton, N. M., since it was opened, in 1899. He finds that pulmonary hæmorrhage has been the cause of about ten per cent. of the deaths among the pulmonary tuberculous patients of the sanatorium. He thinks that syphilis and chronic alcoholism increase the liability to fatal hæmorrhage. Small hæmorrhages rarely cause sudden death, but they may give rise to dangerous insufflation pneumonia. Recurrence of hæmorrhage is seldom if ever observed after bronchopneumonia develops. No age period of adult manhood seems especially predisposed to fatal pulmonary hæmorrhage. A special exciting cause of fatal bleeding was noticeably absent in the cases observed: the majority of the subjects were in bed when it occurred and a large number were presumably asleep. Acute types of tuberculous pulmonary disease are the least liable to the accident, and negroes show a lower mortality from hæmoptysis than whites. Hæmorrhage has not been common in patients who have recently arrived from sea level, and the increased mortality from bleeding after a prolonged stay may properly be ascribed to the chronic type of disease in these persons. Disease of the heart or embarrassment of the circulation from any cause predisposes to a fatal issue when pulmonary hæmorrhage occurs. Hæmoptysis is not more frequent at great altitudes than at the sea level, but perhaps the results are oftener serious, especially in persons with impaired circulation. The altitude of Fort Stanton is 6,231 feet.

SUBACUTE GONORRHŒAL PROSTATIC SUPPURATION.

While acute and chronic prostatic inflammations have been thoroughly studied of recent years, the subacute lesions, although very common, are badly understood, and their treatment, which is of the very greatest importance, is defective. In a recent number of the *Archives générales de chirurgie,* Gardner, of New York, describes three types of lesions, namely, a purulent catarrhal inflammation, an interacinous interstitial suppuration, and a chronic exudation with infiltration of the stroma with lymphocytes and chronic œdema. Particular attention should be paid to the coexistence of these various lesions in a single prostate, and it is for this reason that Alexander came to the conclusion some time since that no operative treatment was of any avail except prostatectomy.

However, this operation may present serious objections in young subjects in full genital activity. Nevertheless, an operation should be undertaken earlier and should be more radical than it is in general, and as soon as pus is present in the prostate it should be thoroughly evacuated. The symptoms of the presence of pus are persistent dull pains and a feeling of weight in the perinæum, while by rectal examination a soft and painful spot will be found in the gland when pressure is used. Retention of urine is also an almost constant sign of a suppurative process in the gland.

Consequently operative interference should be resorted to. A rectal incision and giving issue to the pus by way of the urethra are defective methods. The one of choice is an extraurethral incision made through the perinæum, freely exposing the posterior aspect of the prostate. An intraurethral opening by way of the perinæum after incision of the membranous urethra should be employed in those cases where the abscess is small and situated near the canal, also in those cases where the gonorrhœa is no longer very virulent, because otherwise epididymitis is always to be feared. In thus applying the same principles followed in suppurative processes of other structures to prostatic suppuration, fewer cases of the chronic type will be met with.

Obituary.

J. HENRY DUNANT,
of Geneva.

On October 31st there died in a sanatorium in Heiden, Switzerland, a man whose name should be known all over the world. Henry Dunant was the founder of the Red Cross. Born in Geneva, in 1828, of independent means, he became a sociologist and tried as such to lighten the burden of the poor. He witnessed the battle of Solferino in 1859 and thereupon attempted to ameliorate the lot of the wounded soldier. He published his well known book *Un Souvenir de Solferino* and made propaganda for his idea, finally succeeding in founding, in 1864, the Geneva International Congress under the presidency of the Queen of Prussia, Augusta. The congress adopted the Geneva cross as an insigne of neutrality and protection for the medical service in war on land (August 22, 1864), which was four years later (October 15, 1868) applied to war at sea. Thus started the Red Cross Society, which finally adopted the fundamental idea of its founder: ameliorating the condition of suffering mankind. Dunant was active in a literary way. He met with financial reverses in later years. In 1901 he received the Nobel prize.

FRANK NEWELL LEWIS, M.D.,
of New York.

This well known ophthalmologist died on Sunday, November 13th, aged fifty-three, after a short illness. He was a native of Vermont and a graduate of the Medical Department of the University of Vermont, of the class of 1882. He was professor of diseases of the eye in the New York Postgraduate Medical School and Hospital and one of the surgeons to the Manhattan Eye, Ear, and Throat Hospital. He was a good teacher and a very successful practitioner.

News Items.

Changes of Address.—Dr. A. G. Drury, to 836 Lincoln Avenue, Walnut Hills, Cincinnati, Ohio.

Dr. Edward Waitzfelder, to 104 West Seventy-fourth Street, New York.

A Special Clinic for the New York and New England Association of Railway Surgeons was given at the New York Post-Graduate Medical School and Hospital, on November 4th.

The Death of a Distinguished Pathologist.—It is announced that Dr. Etienne Lancereaux of Paris, died recently after a few days' illness with pneumonia. He was nearly eighty-one years old.

Dr. Shoemaker's Successor.—Dr. Horatio C. Wood, Jr., has been appointed professor of materia medica and therapeutics at the Medico-Chirurgical College, Philadelphia, to fill the vacancy caused by the death of Dr. John V. Shoemaker.

The Ohio Valley Medical Association.—At the annual meeting of this organization, held in Evansville, Ind., on November 9th and 10th, the following officers were elected: President, Dr. W. D. Haines, of Cincinnati; first vice-president, Dr. L. D. Brose, of Evansville; second vice-president, Dr. Daniel N. Eisendrath, of Chicago; third vice-president, Dr. Henry R. Alburger, of Bloomington; secretary and treasurer, Dr. Benjamin L. W. Floyd, of Evansville.

Two New Emeritus Professors at the University of Pennsylvania.—Dr. James Tyson, for many years professor of medicine in the University of Pennsylvania, has been made emeritus professor of medicine by the trustees of the university, and Dr. Louis A. Duhring has been made emeritus professor of dermatology.

The Harvey Lectures.—The second lecture in the course will be delivered on Saturday evening, November 19th, by Professor Jacques Loeb, of the Rockefeller Institute for Medical Research. His subject will be The Prevention of the Toxic Action of Various Agencies Through the Prevention of Oxidation in the Cell.

The Southwest Missouri Medical Association held its semiannual meeting in Springfield on Thursday and Friday, November 3d and 4th. There was a large attendance and a good programme of scientific papers was presented. The annual meeting of the organization will be held in Springfield some time next spring, when officers will be elected.

The Medical Society of the County of Suffolk, N. Y., held its annual meeting in Riverhead recently and elected the following officers: President, Dr. James L. Halsey, of Islip; vice-president, Dr. Hugh Halsey, of Southampton; secretary, Dr. Frank Overton, of Patchogue; treasurer, Dr. B. D. Skinner, of Southold; censors, Dr. W. N. Barnhart, Dr. Lawrence Coffin, and Dr. F. E. Benjamin.

Water and Sewage Purification.—In addition to the regular courses in bacteriology and sanitary water analyses, which are offered for every week of the year to the health officers of New York State, the department of health announces a special course on the subject of water and sewage purification. The first of these courses will be given in Albany, at the State Hygienic Laboratory, on Wednesday, Thursday, and Friday, December 7th, 8th, and 9th.

Alumni Association Dinner.—The seventh annual dinner of the Alumni Association of the Cumberland Street and Brooklyn Homœopathic Hospital was held on Friday evening, November 4th. About sixty members of the association were present and a number of guests. Dr. John L. Moffat, president of the association, was toastmaster, and among the speakers were Dr. John E. Wilson, of Manhattan, Dr. Royal C. Copeland, Dr. John C. MacEvitt, Dr. T. L. Fogarty, and Dr. John F. Fitzgerald.

The American Physiological Society will hold its twenty-third annual meeting in New Haven, Conn., on December 27th, 28th, and 29th. The sessions will be held in the Sheffield Scientific School, Yale University. Dr. William H. Howell, professor of physiology in the medical department of Johns Hopkins University, is president of the society, and Dr. A. J. Carlson, associate professor of physiology in Rush Medical College, Chicago, is secretary.

The Society of Medical Jurisprudence held its 232d regular meeting on Monday evening, November 14th, in the New York Academy of Medicine. The evening was devoted to a consideration of the subject of psychotherapy. Its medical aspect was dealt with by Dr. Smith Ely Jelliffe, its theological aspect by the Rev. Junius B. Remensnyder, D. D., LL. D., and its legal aspect by William A Purrington, Esq. Officers for the ensuing year were nominated at this meeting, and the election will be held at the December meeting.

The New Provost of the University of Pennsylvania.—Edgar F. Smith, Ph. D., director of the John Harrison Laboratory of Chemistry, of the University of Pennsylvania, and vice-provost of the institution since 1898, has been chosen provost, to succeed Dr. Charles C. Harrison, whose resignation becomes effective on December 31, 1910. Dr. Smith is a leading authority on electrochemistry, and his work on that subject has been translated into many languages, including Chinese. He is the author of many books on chemistry, and is widely known for his researches in that branch of science.

Lectures on Public Health Problems.—Dr Simon Flexner, director of the Rockefeller Institute for Medical Research, on Monday afternoon, November 21st, will deliver the seventh lecture in the course, which is being given at Teachers College, Columbia University, under the auspices of the Department of Health. His subject will be Some Examples of the Control of Infectious Diseases. The eighth lecture will be delivered the following Monday afternoon by Dr. Ernst J. Lederle, health commissioner of New York City, the subject being The City Milk Supply and Its Control. These lectures are open to the public.

The Medical Society of Virginia.—At the forty-first annual meeting of this society, held in Norfolk, on October 25th to 28th, the following officers were elected to serve for the ensuing year: President, Dr. O. C. Wright, of Jarratt; first vice-president, Dr. Joseph T. Buxton, of Newport News; second vice-president, Dr. R. M. Wiley, of Salem; third vice-president, Dr. McGuire Newton, of Richmond; treasurer, Dr. R. M. Slaughter, of Theological Seminary; secretary, Dr. Landon B. Edwards, of Richmond. The forty-second annual meeting of the society will open in Richmond on the fourth Tuesday in October, 1911.

An Advisory Board of Statisticians to the New York Department of Health has been appointed by Dr. Ernst J. Lederle, health commissioner of New York City. This board will endeavor to formulate a plan for the better computation of health and mortality statistics. It consists of the following members: Dr. Lederle, Dr. Roger S. Tracy, Dr. William H. Guilfoy, registrar of vital statistics of the health department; Dr. Cressy L. Wilbur, chief statistician, Bureau of the Census, Washington, D. C., Professor C. E. A. Winslow, of the College of the City of New York, and Professor Walter F. Willcox, of Cornell University, consulting statistician of the State Department of Health.

The New York Milk Committee will hold a conference on December 2d and 3d for the purpose of discussing the most efficient ways of controlling the municipal milk supply. The work of the conference has been divided into four sections, as follows: Milk economics, milk supply and the public health, milk standards, and milk commissions. Physicians, sanitarians, research workers, and representatives of the Municipal, State, and National Health and Agricultural Departments have signified their intention of being present at this conference. The meetings are all free to the public, and the medical profession is cordially invited to attend and participate in the discussions. For complete programmes and further information regarding the conference communicate with Dr. Ira S. Wile, 230 West Ninety-seventh Street, who is chairman of the Conference Committee.

The Queens-Nassau Medical Society will hold its semiannual meeting in the Elks' Home, Long Island City, N. Y., on Saturday evening, November 26th, at eight o'clock, under the presidency of Dr. Philip M. Wood, of Jamaica. The programme includes three papers, as follows: The Diagnosis of Ectopic Gestation, by Dr. Charles F. Adams, of Columbus Hospital, New York; Some Facts in the Pathology and Treatment of Thyreoid Disorders, by Dr. S. P. Beebe, of Cornell University Medical School; Certain Forms of Cough and their Treatment, by Dr. John A. McCorkle, of Long Island College. There will be general discussions of these papers, following which the annual address of the president will be delivered by Dr. Wood. The officers-elect for the term commencing January 1, 1911, are: President, Dr. A. W. Jagger, of Flushing; vice-president, Dr. H. M. Warner, of Hempstead; secretary and treasurer, Dr. James S. Cooley, of Mineola.

A Campaign for the Prevention of Insanity.—The State Charities Aid Association, of New York, has appointed a special Committee on Mental Hygiene, which announces the beginning of an aggressive campaign for the prevention of insanity throughout the State. This committee states that its campaign will be conducted on lines similar to the crusade against tuberculosis which is being carried on by the State Charities Aid Association. It will endeavor to instruct the public regarding the more clearly defined causes of insanity, those which are tangible and hence preventable. Among the features of the campaign will be an exhibit similar to the tuberculosis exhibits, which have played such a large part in educating the public regarding the causes and prevention of tuberculosis. Among the members of the committee are: Dr. M. Allen Starr, professor of neurology, College of Physicians and Surgeons, Columbia University; Dr. Charles L. Dana, professor of neurology, Cornell University Medical College; Dr. Frederick Peterson, professor of psychiatry, Columbia University, and Dr. Bernard Sachs, neurologist to Bellevue and Mount Sinai Hospitals. Dr. Albert Warren Ferris, president of the State Commission in Lunacy, Dr. August Hoch, director of the Psychiatric Institute, and Dr. William Mabon and Dr. W. L. Russell, general medical superintendents of the two State hospitals for the insane, in New York, are ex-officio members. Mr. Homer Folks is chairman of the committee.

The Medical Association of the Greater City of New York will hold a stated meeting in Du Bois Hall, New York Academy of Medicine, on Monday evening, November 21st, at 8:30 o'clock. A paper entitled Tumors of the Female Breast will be read by Dr. George H. Balleray and discussed by Dr. William M. Polk and Dr. Samuel H. Lloyd. Other papers on the programme are The Operative Treatment of Fractures, by John B. Walker, and Neglected Details in the Treatment of Fractures, with Special Reference to the Leg, by Dr. Carl Beck. A general discussion of the subject of fractures will follow, which will be participated in by Dr. Robert T. Morris, Dr. Carl E. Pfister, Dr. Kingman B. Page, Dr. Benjamin T. Tilton, Dr. Charles A. Elsberg, Dr. Jacob Heckmann, and Dr. William Darrach.

The Health of Chicago.—During the week ending November 5, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 65 cases, 9 deaths; measles, 17 cases, 1 death; whooping cough, 13 cases, 0 deaths; scarlet fever, 106 cases, 6 deaths; diphtheria, 210 cases, 26 deaths; chickenpox, 42 cases, 0 deaths; tuberculosis, 136 cases, 54 deaths; pneumonia, 6 cases, 85 deaths; cerebrospinal fever, 1 case, 0 deaths; infantile paralysis, 1 case, 0 deaths. There were 30 cases of contagious diseases of minor importance reported, making the total number 627, as compared with 578 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 54, and there were 30 deaths due to congenital defects and accidents. The total deaths of children under five years of age numbered 168, of whom 107 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 572, corresponding to an annual death rate of 13.7 in a thousand of population, as compared with rates of 12.3 for the preceding week and 15.1 for the corresponding period last year.

A New Clinic for the New York University.—At a meeting of the faculty of the University and Bellevue Hospital Medical College, held last week, Dr. C. G. Coakley, chairman of the committee on the university clinic, announced that a friend had given sufficient funds for the equipment of a clinic for minor surgical operations, and also funds for the maintenance of the clinic for one year, including a special surgical nurse. The department will care for minor operations which cannot secure free treatment in city hospitals, and which few physicians' offices are equipped to handle. The department will also furnish students a better opportunity for practical observation in methods of modern antiseptic surgery than is possible at more serious operations. The number of cases treated free in the Medical College clinic in the past year was 107,000. The erection of the new Carnegie Laboratory extension has made it possible to provide adequate waiting room space and better quarters for the department of orthopædic surgery.

The American Association for the Study and Prevention of Infant Mortality held its first annual meeting in Baltimore on November 9th, 10th, and 11th, under the presidency of Dr. J. H. Mason Knox, Jr., of Baltimore. The meeting was well attended by physicians, health officers, and social workers from all parts of the United States, and delegates were present from Canada. An excellent programme of papers was presented, and the discussions brought out many valuable points relating to the prevention of infant mortality. One of the chief features of the convention was an exhibition in which everything relating to the welfare of the baby was shown. This exhibit will remain open until November 16th. Dr. Charles Henderson, of the University of Chicago, was elected president of the association, and Chicago was selected as the place for next year's meeting. The other officers elected were: President-elect for 1912, Dr. Cressy L. Wilbur, chief statistician, Bureau of the Census; vice-presidents, Harold McCormick, of Chicago; Dr. Henry L. Coit, of Newark, N. J.; secretary, Dr. F. S. Churchill, of Chicago; treasurer, Austin McLanahan, of Baltimore; Executive Committee, Professor Henderson, Dr. Churchill, Dr. J. H. Mason Knox, Jr., of Baltimore; Dr. John S. Fulton, of Baltimore; Dr. Mary Sherwood, of Baltimore; Dr. Joseph S. Neff, of Philadelphia, and Dr. Helen C. Putnam, of Providence. The permanent headquarters of the association will remain in Baltimore, where they were established a year ago, and Miss Gertrude B. Knipp was reappointed executive secretary.

Vital Statistics of New York.—During the week ending November 5, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,226, corresponding to an annual death rate of 13.32 in a thousand of population, as compared with a rate of 15.23 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 13.39; the Bronx, 12.58; Brooklyn, 13.49; Queens, 11.93; Richmond, 16.27. There were 128 stillbirths. The deaths of children under five years of age numbered 324, of whom 223 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 73; over five years of age, 81. There were 18 deaths from suicide, 7 from homicide and 73 due to accidents.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 12, 1910:

	November 5th.		November 12th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	518	151	573	163
Diphtheria and croup	315	23	312	30
Measles	97	7	106	5
Scarlet fever	127	5	134	3
Smallpox	..	..	..	..
Varicella	43	..	69	..
Typhoid fever	86	15	133	26
Whooping cough	44	3	54	3
Cerebrospinal meningitis	6	3	2	2
Total	1,236	209	1,383	232

The Health of Philadelphia.—During the week ending October 29, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 34 cases, 7 deaths; malarial fever, 3 cases, 0 deaths; scarlet fever, 47 cases, 1 death; chickenpox, 13 cases, 0 deaths; diphtheria, 90 cases, 11 deaths; cerebrospinal meningitis, 1 case, 0 deaths; measles, 26 cases, 1 death; whooping cough, 20 cases, 7 deaths; pulmonary tuberculosis, 241 cases, 44 deaths; pneumonia, 29 cases, 38 deaths; erysipelas, 13 cases, 1 death; mumps, 3 cases, 0 deaths; infantile paralysis, 4 cases, 0 deaths; tetanus, 2 cases, 1 death. There were 7 deaths from tuberculosis other than that of the lungs, 1 from dysentery, and 30 from diarrhœal diseases under two years of age. There were 40 stillbirths; 19 males and 21 females. The deaths from all causes numbered 424, in an estimated population of 1,598,400, corresponding to an annual death rate of 13.79 in a thousand of population.

The American Society of Medical Sociology is the name of a society recently organized in New York for the avowed purpose of "studying radically all questions of a sociomedical nature." Some of the questions which are now under investigation by members of this society are: The need of a Federal Department of Health; Tuberculosis as an economic disease; Is there any demonstrable relationship between the strain of our modern life and the increase of insanity? Is cancer on the increase, and if so, what are the probable ætiological factors? What are the best, *i. e.*, the most humane and most effective methods of dealing with prostitution? The best methods of preventing venereal infection? Is complete sexual abstinence (*a*) likely to impair the general health? (*b*) likely to result in impotence? The relative influence of heredity and environment on the physical, mental and moral characteristics of the offspring; The question of marriage and divorce; Is the regulation of conception morally justifiable, and if so, what are the best methods? Abortion in its medical and ethical aspects; Alcohol (*a*) as a beverage, (*b*) as a medicine. Its physiological, medicinal, social and economic effects; Infant mortality, its principal causes and prevention; Occupational or trade diseases; Food adulterations and their influence on health; The causes of quackery, Christian science and other cults, and the influence of the irregular cults of medicine on public health. The results of these investigations will be discussed at the meetings of the society. Dr. Abraham Jacobi is honorary president; Dr. William J. Robinson is president; Dr. William L. Holt and Dr. James P. Warbasse are vice-presidents, and Dr. A. C. Jacobson is secretary. Requests for information, applications for membership, etc., should be addressed to the American Society of Medical Sociology, 12 Mount Morris Park West, New York.

Epidemic Poliomyelitis was the topic chosen for consideration at a regular meeting of the Section in Medicine of the Buffalo Academy of Medicine, held on Tuesday evening, November 15th. The report of the Committee on Epidemic Poliomyelitis was presented by the chairman, Dr. Irving M. Snow. Dr. Bernard Sachs, of New York, chairman of the New York Committee on Epidemic Poliomyelitis, read a paper on the subject, which was discussed by Dr. J. W. Putnam, Dr. F. S. Crego, Dr. Snow, and others.

Stated Meetings of the New York Academy of Medicine.—On Thursday evening, December 1st, a stated meeting of the academy will be held in Hosack Hall, under the auspices of the Section in Surgery. Dr. John Rogers will read a paper entitled A Theory for the Pathological Physiology of Graves's Disease. Dr. Charles H. Mayo, of Rochester, Minn., will read a paper on the Surgical Treatment of Hyperthyreoidism. There will be a general discussion of the subject. On Thursday evening, December 15th, a stated meeting will be held under the auspices of the Section in Obstetrics and Gynæcology. Dr. Barton Cooke Hirst, of Philadelphia, will read a paper on the Clinical Peculiarities of Gonorrhœa in the Child Bearing Woman. Dr. Hermann J. Boldt will read a paper on the Treatment of Gonorrhœa in Women. Among those who will take part in the discussion are Dr. J. Clifton Edgar, Dr. John O. Polak, Dr. H. C. Coe, Dr. E. B. Cragin, Dr Franklin A. Dorman, Dr. Robert L. Dickinson, and Dr. Ward.

Gifts to the Tuberculosis Preventorium.—To encourage the development of the Tuberculosis Preventorium for Children, which last April removed from Lakewood to Farmingdale, the estate of Albert Brisbane, through Arthur Brisbane, has presented to the institution sixty-four acres of land at Farmingdale, N. J., and a free lease for twenty-five years of the Windsor stock farm adjoining, which comprises 240 acres under cultivation. As the physicians and architects of the preventorium found it necessary to have twenty acres more to obtain the ideal site, Mr. Brisbane has just bought an adjoining farm of 104 acres, to be able to contribute the twenty acres desired. The total gift therefore comprises 84 acres in fee simple and 240 acres on a free lease for twenty-five years. Mr. Brisbane has also presented to the preventorium cows, wagons, furniture, and other accessories. Nathan Straus has already given $50,000 for model buildings, to be constructed on the farm. The Board of Health Auxiliary connected with the Association of Tuberculosis Clinics has subscribed $4,500 to build an additional open shack, for which they will select the children. This auxiliary has also subscribed for the support of the shack. To complete the plans to take care of 400 children at a time, the preventorium will require $50,000 more for buildings and additional memberships of $85,000 a year. Any one may become a member by paying from $1 to $1,000 a year.

Society Meetings for the Coming Week:

MONDAY, *November 21st.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, *November 22d.*—New York Dermatological Society; New York Otological Society; New York Medical Union; Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Metropolitan Medical Society of New York City.

WEDNESDAY, *November 23d.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, *November 24th.*—New York Academy of Medicine (Section in Obstetrics and Gynæcology); East Side Physicians' Association of New York; Brooklyn Pathological Society; Hospital Graduates' Club New York; New York Celtic Medical Society; Brooklyn Society for Neurology.

FRIDAY, *November 25th.*—New York Clinical Society; New York Society of German Physicians; Academy of Pathological Science, New York.

SATURDAY, *November 26th.*—West End Medical Society; New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 10, 1910.

1. Spinal Anæsthesia, By Freeman Allen.
2. Ætiology of Elephantiasis, By George Cheever Shattuck.
3. Congenital Ophthalmoplegia Externa, By S. C. Webber.
4. The Technique of Arthrotomy. A Report upon and Discussion of One Hundred and Ninety-eight Cases, By Charles F. Painter and Andrew P. Cornwall.

1. **Spinal Anæsthesia.**—Allen gives as indications for spinal anæsthesia alcoholism, old age, debility, certain cardiac cases, bronchitis, arteriosclerosis, extreme dread of general anæsthesia, diabetes, urinary septichæmia, shock, intestinal obstruction, renal insufficiency. In the course of his work, however, he has come to distinguish certain classes of cases in which spinal anæsthesia works so well as to be the anæsthetic of election whether a definite indication is present or not. These are simple herniotomy in men, prostatectomy, hæmorrhoids, fistula in ano, amputations of leg or thigh, cystoscopy, and urethral or bladder operations. Of the 151 patients, only fourteen were women. There were no children. The report is taken from the Massachusetts General Hospital. There need be no special change from the routine preparation of patients for general anæsthesia. It is, however, important to feed and if necessary stimulate patients just before spinal anæsthesia. They should at all events never be brought to operation starved. They should be given a light breakfast the morning of operation and an eggnog just before operation. The rectum must be emptied. One fourth grain of morphine should be given about a half hour before spinal anæsthesia, especially if the operation is to be a long one. Cocaine, he remarks, has no place in spinal anæsthesia. At the Massachusetts General Hospital they now use stovaine, novocaine, or tropacocaine, always in combination with adrenalin. Freshly prepared solutions have not given satisfaction. The solutions used must not be subjected to the degree of heat necessary to sterilize them, as this spoils their efficiency. They also become inefficient if exposed to alkalies. Therefore, the syringe must not be boiled in water containing soda, and the ampoules containing the solution must be made of alkalifree glass. They use the following preparations, which come in hermetically sealed ampoules which must be filed open; these preparations have given the best satisfaction: 1. Stovaine-Billon, which is dispensed in ampoules of 2 c.c. each; each cubic centimetre contains 0.00013 adrenalin borate, 0.04 stovaine, 0.0011 sodium chloride. The average dose of stovaine is 0.04 gramme. These ampoules contain 0.08 gramme, and are, therefore, double dosed, making it possible to give a minimum or maximum dose. He has never used more than 0.06 gramme. 2. Novocaine, five per cent. solution. Ampoules of 3 c.c. containing 0.15 novocaine, 0.000325 adrenalin borate, and five drops of a 1 in 1,000 boric solution. Dose from 2 to 3 c.c., 0.01 or 0.015 gramme novocaine; the usual dose being 2.5 c.c. 3. Tropacocaine as used by Bier, who administers at present only tropacocaine. Ampoules contain 1.3 c.c. of five per cent. solution tropacocaine, plus adrenalin hydrochloride 0.00013 per cubic centimetre. The dose of tropacocaine is thus 0.05 gramme. In the series of 151 cases stovaine has been used eighty-eight times; novocaine, thirty-six times; tropacocaine, twenty-seven times. Stovaine gives a more intense and longer anæsthesia with a smaller dose than the others, but must be used with great caution. Novocaine requires a larger dose than stovaine to produce the same effects, and is less toxic. Tropacocaine is the safest of the three and is used entirely by Bier, but it does not produce as lasting an anæsthesia as the others. The duration of anæsthesia varies with the drug and its dose. It is usually from forty-five minutes to two and a half or three hours. A dose of tropacocaine (0.05 gramme) often lasts only forty-five minutes, but may last an hour and a quarter. A dose of novocaine (0.1 gramme) will often last two hours and sometimes longer. A dose of stovaine (0.04 or 0.05 gramme) will last two hours or more. By increasing these doses an anæsthesia of three hours can be obtained. No operation requiring so long a time as that should be done under spinal anæsthesia, as the patient's nerves will not ordinarily stand it. The commonest immediate after effects of spinal anæsthesia are headache, backache, stiff neck, sciatic pains, paralyses, ocular palsies. His patients have been remarkably free from after effects. Only two of his patients have had headache. In both cases it was very severe occipital and frontal headache and resisted treatment by ordinary headache remedies. In one case it lasted over twenty-four hours. One patient, a doctor, complained of sciatic pain which he likened to "growing pains." This pain was very severe and required morphine to control it. It lasted eighteen hours. There were a few cases of transient stiff neck.

2. **Elephantiasis.**—Shattuck says that the essential characteristics of typical acquired elephantiasis are lymphangiectasis, hyperplasia of connective tissue, and chronic œdema. The relation of these to each other in the production of elephantiasis is not clear. It appears that these changes may frequently be attributed to the interaction of stasis and of inflammation. Stasis always occurs early and persists. Inflammation may precede or follow stasis, or may not be manifest at any stage of the disease. Inflammation when present may be acute or chronic; and is generally traceable to bacterial infection. Either chronic stasis or inflammation from any cause may predispose to elephantiasis, but even when they occur together, elephantiasis does not always result. There is reason to suppose that congenital weakness or anomalies of lymphatics may play an essential part in the production of some cases of elephantiasis; and that such weakness or anomalies can be inherited. The filaria is an important factor in the production of endemic elephantiasis of some regions, but it is not essential to the occurrence of endemic elephantiasis. Elephantiasis in filarial regions results indirectly from filariasis through bacterial infection. Sporadic lymphatic elephantiasis and endemic elephantiasis are not essentially different.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 12, 1910.

1. Kidney and Ureteral Stones. By Miles F. Porter.
2. Clinical Use of Strophanthus. By Robert A. Hatcher and Harold C. Bailey.

3. The Work of the Council on Pharmacy and Chemistry, By DAVID L. EDSALL.
4. Acute Nephritis Following Acute Amygdalitis, By HANAU W. LOEB.
5. The Treatment of Typhoid Bacillus Carriers, By WILLARD J. STONE.
6. Artificial Immunization in Nonbacterial Diseases, By S. P. BEEBE.
7. Points in the Application of Vaccine Therapy, By ERNEST E. IRONS.
8. Autogenous Vaccine Therapy in Endocarditis, By E. C. ROSENOW.
9. Significance of Tuberculides in Diagnosis of Tuberculosis in Infancy, By JEROME S. LEOPOLD and T. ROSENSTERN.
10. Thyreoid Secretion as a Factor in Adrenal Activity By R. G. HOSKINS.
11. Suspended Respiration during Operation, By JERE L. CROOK.
12. Diagnosis of Ulcer of the Stomach and Duodenum by the Röntgen Ray, By HARRY ADLER.

2. **Strophanthus.**—Hatcher and Bailey remark that the clinical use of digitalis has proved one of the greatest problems of medicine and, despite the advances made in our knowledge of the pharmacology of this group, the problem has been advanced only, not solved, and there are few practitioners who can invariably distinguish the toxic action of digitalis from the symptoms of cardiac disease. The choice of the member of the digitalis group which is to be used in a given case, whether it shall be digitalis itself in the form of the tincture or the infusion, or one of the active principles, such as digitalein, digitalinum verum or digitoxine, or whether it shall be strophanthus, strophanthin, or ouabain, must be considered mainly as a question of administration, and not with the view to securing any essentially different action, until we know more of the differences following equivalent doses. The intravenous injection of crystalline ouabain affords the most exact dosage possible in digitalis therapy, and the most rapid effect. It is quite possible that any galenical preparation of digitalis or strophanthus will be found available for intravenous or intramuscular injection, but the activity should be determined in terms of crystalline ouabain on the mammalian heart. The cardiac action of any digitalis body is elicited promptly after the intravenous injection. The oral administration of the digitalis bodies will continue to be preferred for the general treatment of cardiac disease, and in such cases the tincture or infusion of digitalis deserves the preference, because they are more readily absorbed than the preparations of strophanthus. He concludes that we are in urgent need of more exact clinical studies of all of the digitalis bodies, particularly with regard to their relative effects on the centres and on the vessels, and we are in equally urgent need of further pharmacological investigations of the rate of absorption and excretion of these several bodies, with an elucidation of the phenomenon of cumulation.

4. **Nephritis Following Amygdalitis.**—Loeb, of St. Louis, observes that acute nephritis results from acute amygdalitis far more often than is generally believed. The symptoms ordinarily are not manifested until some time after the inception of the disease. The nephritis is of the hæmorrhagic type and differs from that of scarlet fever in that pyrexia, œdema, and oliguria are not marked symptoms of the disease. In addition, it follows the angina and is not concomitant as in scarlatina and diphtheria. Judging from the course of the cases reported, there must be many in which a mild nephritis occurs incident to an amygdalitis, which goes on to resolution without patient or physician being conscious of its presence. As each case of lacunar amygdalitis may be a potential source of acute nephritis, it is incumbent on practitioners to observe the urine, not only during the height of the disease, but for some time after as well. Spontaneous or idiopathic nephritis is probably often due to an amygdalitis that has not been considered as an ætiological possibility. Chronic affections of the kidney may very well owe their origin to unrecognized acute attacks of nephritis of tonsilar origin. Much light may be shed on this subject by a study of the urine in a large number of cases of acute amygdalitis.

5. **Typhoid Carriers.**—Stone observes that the time element is an important factor in the reaction of susceptibility to inoculations of bacterial vaccines in typhoid carriers. Typhoid carriers, injected within a comparatively short time after their infection, will, in all probability, receive more benefit from properly prepared autogenous vaccine than from any other known form of treatment. "Contact carriers," who never to their knowledge have had typhoid, are more susceptible to the inoculations than carriers who have had a definite attack of this disease, and who are in all probability more immune. Where the infection has persisted for years, it may be difficult to clear up the condition by bacterial inoculation. The effort should at least be made, since in the somewhat similar condition, chronic carriers of apparently nonvirulent tubercle bacilli, the bacilli often disappear from the sputum during a course of inoculations of some one of the tubercle products. The immunity manifested by typhoid carriers is in all probability a partial immunity in the sense that while these individuals are protected against the infection through an augmented phagocytic power held by their body cells, the antibacterial substances such as the bactericidins and lysins are lessened to a degree insufficient to exert any destructive power against the infection.

6. **Artificial Immunization.**—Beebe states that investigations have been made on malignant tumors in mice, rats, dogs and rabbits all of which agree in what appear to be certain fundamental principles in cancer immunity. The first of these principles is that a varying percentage of animals is normally immune to the tumor; the reason, however, is unknown. In some instances, apparently, it is related to the external physiological surroundings, such as climate, food, and water supply and, in other instances, to the inherent character of the tissues in which the tumor is planted. The second principle is that a varying percentage of successfully inoculated animals recover spontaneously, the number depending on the virulence of the tumor and the resistance of the animal. We have found means to increase the virulence of the tumors. The resistance of the animal, likewise, may be modified by various procedures. The third important principle is that the recovered animal is immune for a long time to further implantation of tumors of like virulence, and as

a consequence of this principle the highest degree of immunity with which we are familiar occurs in those animals which have grown a virulent tumor and have spontaneously recovered therefrom aided, perhaps, by some one of the various methods under our control. Immunity to tumors is not to any considerable extent a serum immunity, inasmuch as the usual methods of demonstrating immune factors by serum reactions have in most instances been negative. Clowes, however, found that serum from a recovered animal had a deleterious effect on tumor cells, preventing their growth in a considerable percentage of cases on subsequent transplantation. What seems the most conclusive demonstration yet published of the fact that the serum of a recovered animal has antagonistic action on the tumor, is found in the results published by Crile and Beebe, in which it was shown that transfusion of large quantities of recovered blood to an animal with actively growing tumors would cause complete absorption of the latter, with the usual subsequent immunity to further implantation. More recently, he has carried out a further series of transfusion experiments, in which he has found unmistakable evidence that the regression of the tumor is an essential factor for the future immunization of the animal, and that transfusion of immune blood into an animal susceptible to the tumor, but free from tumors at the time of the transfusion, does not confer immunity for subsequent implantation. There apparently must be some interaction between the serum and tumor by which the regression is started, the immune forces of the animal thereby awakened, and future protection assured.

MEDICAL RECORD

November 12, 1910.

1. The Relation of the Acid Fast Tubercle Bacillus to Other Forms of Bacterial Life, By Stephen J. Maher.
2. The Diagnostic and Therapeutic Value of Lumbar Puncture, By Leon Louria.
3. Insufficientia Pylori, By Mark I. Knapp.
4. Some Peculiar Results of Eye Strain, By William Martin Richards.
5. Technique of Examination of the Duodenal Contents, By Maurice Gross, F. von Oefele, and Max Rosenberg.
6. A Case of Death under Gas and Oxygen Anæsthesia, By G. Frank Lydston.

1. **Tubercle Bacillus.**—Maher makes the statement that culturable bacterial forms other than tubercle bacilli can grow from old tubercle bacilli. He gives five reasons: 1. Because of the appearance and development of the coccal granules in the old bacillary forms before their extrabacillary appearance and development; 2, because of the convincing pictures of the relationship between the free and contained cocci shown in the second and third subculture on hard glycerinized or sweetened media; 3, because of the ease with which the transition from the acid fast, slowly growing tubercle bacillus to the chromogenic quick growing purely acid fast or nonacid fast bacillus can be followed on smears; 4, because of the slight viability of the nonacid fast rods and cocci derived from the old or moistened cultures of tubercle bacilli. It was only by quick and frequent subculturings that they could at first be kept alive. They could not have lived forty-eight hours in the media on which the tubercle bacilli were growing. 5. Because every culture of tubercle bacilli that gave him these strange coccal and bacillary growths was capable when planted on favorable media, of growing pure subcultures of acid fast tubercle bacilli. He summarizes his deductions in the form of questions: 1. Is not the acid fast tubercle bacillus simply a most highly specialized acid fast bacillus that has acquired the faculty of resisting the lytic power of the animal cell? And like all other acid fast bacilli, was it not derived originally from a nonacid fast bacillus? 2. Does not the hope for the infected animal lie, not in killing the invader outright, but in depriving him of his acid fast armor and weapons? 3. Does not the great sensitiveness of the tubercle bacillus to change of environment *in vitro*, afford a key to the solution of Nature's cures of tuberculous animals? 4. When the infected animal is cured by change and fresh air, is it not because in the new environment the tubercle bacillus has difficulty in perfecting its acid fast development and therefore grows nonacid fast or poorly acid fast, or breaks up into cocci, which may or may not win the next battle with the cells? (If the cells win, the patient recovers; if the cells lose, the coccal and rod forms quickly break down surrounding tissue entrenchments; then slowly, as *in vitro*, begins again the victorious progress of the acid fast tubercle bacilli.) 5. Is not all the literature concerning the organisms of the secondary invasion or of mixed infection in tuberculous areas a huge blunder because of its failure to recognize the fact that the so called secondary invaders are practically always derivatives of the struggling acid fast tubercle bacillus? 6. Does not the devolution of the acid fast tubercle bacillus into culturable cocci and nonacid fast bacilli harmonize with and complete the theory involved in the important communications of Much and his followers, and Foulerton and others, and make the further and thorough study of the points at issue, altogether the greatest need in the present tuberculosis problem?

2. **Lumbar Puncture.**—Louria remarks that lumbar puncture is a simple operation, practically devoid of danger if performed with due aseptic precautions. Quincke's needles ought to be added to the armamentarium of every general practitioner. The latter should not hesitate to perform lumbar puncture in any case in which symptoms point to meningeal or cortical irritation. The cytological and chemical examination of the cerebrospinal fluid can be performed by the physician himself or in any well equipped laboratory. An early application of lumbar puncture will clinch the diagnosis in many cases, in some will bring decided relief, and in a few will even effect a cure.

BRITISH MEDICAL JOURNAL.

October 29, 1910.

1. Remarks on Diaphragmatic Herniæ, By Arthur Keith.
2. Typhoid Perforations and Perforations of the Gallbladder, By George E. Armstrong.
3. Bacillus Coli Infections, with Special Reference to their Recognition and Comparative Frequency, By J. Staveley Dick.
4. On the Diet of a Patient before Operations under General Anæsthesia, By Rowland W. Collum.
5. Ophthalmic School Clinics in the Country, By R. Beatson Hird.

6. Submucous Resection of the Septum Nasi, By T. Jefferson Faulder.
7. Three Bad Prognostic Signs in Eclampsia, By William Fletcher.

SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Section in Ophthalmology.

8. Discussion on the Future of Ocular Therapeutics, Introduced by G. A. Berry.
9. The Use of Carbon Dioxide Snow in Eye Work, By N. Bishop Harman and E. Reginald Morton.
10. On the Conditions which may Account for the Greater Prevalence of Cataract in India, By L. J. Pisani.
11. Discussion on the Diagnostic Values of Ophthalmoplegia, Partial and Total, Introduced by J. S. Risien Russell.
12. The Education of High Myopes, By N. Bishop Harman.
13. The Operative Treatment of High Myopia, By A. Hugh Thompson.
14. A Plea for the More Extended Use of Buccal Mucous Membrane in Enlarging Certain Forms of Contracted Socket, By Arthur H. Benson.
15. Discussion on the more Chronic Forms of Anterior Uveitis, Introduced by W. T. Holmes Spicer.
16. Drainage after Cataract Operations, By Major G. H. Fink.
17. School Clinics, By N. Bishop Harman.

Section in Physiology.

18. Discussion on the Factors that Make for an Efficient Circulation, Introduced by Professor E. A. Schäfer.
19. Discussion on Food Requirements for Sustenance and Work, Introduced by Melville.
20. The Forces Governing the Gas Exchange in the Lungs, By August Krogh.
21. The Excretion of Creatine in Diabetes Mellitus, By M. Ross Taylor.

1. **Diaphragmatic Herniæ.**—Keith observes that herniæ through the diaphragm fall into two groups, the congenital and the acquired, the former being to the latter in the present series of thirty-four cases as 26.8 per cent. The congenital herniæ are chiefly those which occur at the unclosed pleuroperitoneal passages (twenty-one cases), the others being forced (five cases) by developmental extrusions of the abdominal viscera, chiefly liver, through the septum transversum. In a certain proportion of congenital cases it appears possible to adopt surgical measures for the cure of the condition.

2. **Typhoid Perforation of the Gallbladder.**—Armstrong states that necrosis of the gallbladder wall follows marked infiltration of the outer half with lymphoid, plasma, and endothelial cells, in which respect it differs from an ordinary suppurative process. The extensive œdema is possibly due to thrombosis of vessels, though only a single organized thrombus could be found in a series of ninety-seven cases. The character of the cellular reaction supports the theory of a direct infection of the gallbladder wall by the typhoid bacillus as against pyogenic infection, or infection secondary to a cholecystitis. The only demonstrable bacteria in the lesions were bacilli consistent in morphology with the typhoid bacillus. The route of infection could be either through the blood stream or through lymphatics from infected lymph nodes which might be incorporated in the wall of the gallbladder. Of the ninety-seven cases seventy-eight were operated in, and in four cases a second operation became necessary for a second perforation.

7. **Three Bad Prognostic Signs in Eclampsia.**—Fletcher draws attention to three bad prognostic signs in eclampsia—namely: 1. A small amount of albumin in the urine; 2, a high temperature; and, 3, *post partum* onset of symptoms.

10. **On Conditions Which May Account for the Greater Prevalence of Cataract in India.**—Pisani states that our present knowledge as regards light may be summed up as follows: In those parts of India where light and glare are intense cataract is very prevalent. The position of the opacity in glass blowers' cataract suggests that light may be the cause of this form of cataract. Cataract has not been artificially produced by sunlight. Cataract has been artificially produced by electric light in animals. Exposure to intense electric light in man does not produce cataract. No reliable case has, up to the present, been recorded of the production of lens opacities by the ultra violet rays. That the inhabitants of mountainous regions where ultra violet rays abound, would, if these rays were the cause of cataract, be the greatest sufferers, which is not the case (Birch-Hirschfeld). As regards heat, he concludes as follows: That great dry heat prevails in those parts of India where cataract is common. That direct heat has not been proved to produce cataract. That glass blowers' cataract can be as well explained by a heat as by a light theory, as both conditions coexist. That concentration of the aqueous by the introduction of sodium chloride into the system, or into the anterior chamber, produces lens opacities. The aqueous has been found to contain an excess of sodium chloride in men suffering from cataract. That great loss of fluid from the system in cholera has been known to produce cataract. There may be more than one form of cataract, each produced by a different cause, as suggested by Hess, but whatever the cause or causes may be, one condition is necessary, the presence of a "senile lens"—that is, a lens undergoing nuclear condensation. It is at the time when accommodation fails that cataract commences. The anterior part of the lens and its capsule are the parts which for years have been subjected to the greatest strain in connection with accommodation, and this is perhaps the most vulnerable spot during the period when senile changes are taking place in the lens. The conditions existing in India, which he describes, suggest that exposure to prolonged intense dry heat may produce an alteration in the composition of the aqueous, either by producing a concentration of its normal constituents or by the addition of something abnormal to its composition, which may injuriously act through the anterior capsule starting the formation of cataract.

LANCET

October 29, 1910.

1. The Chief Aim of Medicine, By Sheridan Delépine.
2. Hæmatemesis, By Sir Dyce Duckworth.
3. A Case of Acute Pancreatitis; Operation; Recovery, By Arthur E. Barker.
4. Phagocytosis of Erythrocytes by Endothelial Cells: Some Points in Connection with It, and a Method for Its Demonstration, By W. O. Meek.
5. Some Notes on "Delayed Chloroform Poisoning," By E. D. Telford.
6. A Case of Poisoning by Aconite, By W. Edgecombe.
7. A Method of Removing Nasopharyngeal Fibromata, with Two Illustrative Cases, By Thomas Guthrie.
8. The Treatment of Ascites by Drainage into the Subcutaneous Tissues of the Abdomen, By Peter Paterson.

9. Preliminary Observations on Some Cases of Esophoria not Caused by Refractive Errors, By Reginald A. Morrell.
10. Two Cases of Malignant Pustule, By L. A. Parry.
11. The Treatment of Syphilis with Ehrlich's Dioxydiamidoarsenobenzol, By Wilhelm Wechselmann.

2. **Hæmatemesis.**—Sir Dyce Duckworth remarks that the results of cases of gastric ulcer treated carefully in hospitals are, in the great majority, satisfactory, and have led some observers to believe that in many of such patients there was probably no true ulceration present, but some much less serious condition. With regard to a fatal issue in all cases by hæmorrhage, he says that this is happily not a common occurrence. Whatever the lesion, or the degree of it, the treatment of the patient is the same, and it consists in absolute rest, recumbency with head low, and morphine given hypodermically. Nothing whatever is to be given by the mouth, not even iced water or pieces of ice. Saline solution, in half pint quantities, should be given by the bowel, and nutrient enemata consisting of from eight to ten ounces of peptonized milk, with yolk of egg and grape sugar, repeated three or four times each day for at least three days. The mouth should be cleansed with borax, thymol, and warm water several times a day. He awaits the closing of any oozing vessel or arterial twig by clot, and this delicate process must not be disturbed by matters of any kind introduced into the stomach. These are apt to excite secretion of gastric juice which is unfriendly to a sore surface. Even nutrient enemata are apt to excite this secretion, but the patient must be fed on something. After hæmorrhage, the next grave matter to bear in mind is the possibility of perforation of an ulcer, with alarming symptoms of pain and collapse, calling for immediate surgical action. We may note that our patient suffered from some pain after taking small quantities of whey, and it may be that the excess of rennet in this may have acted as a peptic irritant. Milk and lime water and cream are always safest for the first feeding by the mouth. An ice bag may be laid on the epigastrium during active bleeding, but should not be retained too long at a time. As to medical treatment he says that he never uses astringents now as was formerly the practice. Subnitrate of bismuth and calcined magnesia are the best to employ, twenty grains of each, after a few days when the bleeding is stopped. The lower bowel should be washed out daily and the stools examined for melæna. Calcium lactate in fifteen grain doses, three times a day, has been suggested, but he has not employed it, and adrenalin has been tried, but it was of no avail in one of his cases, he does not think that it is a desirable agent in these cases, and he believes that in most cases we may dispense with any of these drugs if we carry out the physiological principles. Gastroenterostomy should be performed in cases where ulceration is found near the pyloric orifice on opening the stomach. The risk here is that pyloric obstruction may result from a scarred ulcer leading to dilatation and other difficulties. A subsequent operation for the relief of this may thus be avoided. Apart from gastric ulceration, the most formidable cases of hæmatemesis that we are likely to meet with are those dependent on advanced cirrhosis of the liver. This is always a serious and often a terminal symptom in such subjects. The bleeding commonly occurs from rupture of varicose veins at the lower end of the œsophagus—œsophageal piles as they are sometimes called. The loss of blood is sometimes enormous, usually of very dark color. Recurrence of it is almost certainly fatal. Such cases should be treated just as would any others. Happily, with the amendment now recognized in gross alcoholic habits, we do not meet with such examples so often as formerly. Melæna to a large extent occurs in these patients. The liver may be large, and is not always shrunken as might be expected when such an engorgement of the portal venous system is present. Patients suffering from gastric hæmorrhage are always likely to do best in hospitals or nursing homes, where they can secure skilled watching, and be saved from their own importunities and the dangerous meddling of relatives.

4. **Phagocytosis of Erythrocytes by Endothelial Cells.**—Meek observes from his experiments that preparations of endothelial cells are especially suitable for observations on hæmophagocytosis. Human blood sera, whether from "natural" or "immune" sources, which cause agglutination of other human red blood corpuscles, can be shown to also bring about phagocytosis of these erythrocytes by endothelial cells. The amount of hæmopsonin in such sera is closely related to the amount of hæmaglutinin which they contain.

8. **Subcutaneous Drainage in Ascites.**—Paterson uses a glass drain of such a shape that it will not slip into the peritoneal cavity. These drains or buttons are of various sizes, so that a suitable one can be chosen for each case. The buttons consist of a perforated glass cylinder expanded into a flange at each end. The largest size measures one inch across the flanges, three quarters of an inch between the flanges, and has a canal one twelfth of an inch wide. The flange itself has a thickness of about one sixteenth of an inch. The diameter of the flanges and the width of the canal may be the same in the various sizes; but it is essential that the cylindrical part should vary in length, as this part has to pass through the thickness of the abdominal muscles, and as this thickness varies in different individuals so also must the length of this part of the button. Care must be taken to have all the edges and corners rounded and that every part is perfectly smooth. The operation is a simple one. An incision, about three inches long, is made in the middle line below the umbilicus, and the peritoneal cavity is opened in the line of the incision. If the abdomen has not been previously tapped the greater part of the ascitic fluid escapes at this stage. The omentum is now drawn down and removed at a level well above the point where the drain is to be placed, because, if left, it very soon passes into the opening in the drain and completely blocks it. The subcutaneous tissues are now dissected outward on one side, till the semilunar line is exposed, and through this an opening is made into the peritoneal cavity. This opening should just be large enough to permit the button being placed in position. The drain may be passed either from the peritoneal or

subcutaneous side, but if from the latter care must be taken to avoid stripping the peritonæum from the edge of the opening when inserting the tube, or the flange may come to lie between the peritonæum and the subperitoneal tissues. By slipping one flange edgeways through the opening there is no difficulty in placing the button in position. When a suitable size has been chosen one flange should lie flat on the peritonæum and one on the abdominal aponeurosis, without any pressure being exercised on the intervening tissues. If too long, the apparatus would project into the peritoneal cavity, and the intestines might get nipped between the flange and the abdominal wall; while if too short, the button would tend to cut its way through the thickness of the tissues in its grasp. If the opening for the drain has been made too large and the edges do not grip the button firmly, a purse string suture should be placed close to the button on the aponeurotic side. so that when tightened the soft tissues are brought into close contact with the groove in the drain. The subcutaneous tissues are next closely stitched by a continuous suture to the anterior layer of the sheath of the rectus. This suture is placed about one inch from the margin of the primary incision and parallel with it. By this means the superficial end of the drain is shut off in a compartment of its own, and the fluid, as it escapes from the peritoneal cavity, is prevented from throwing too much strain on the suture closing the skin incision. The primary wound is sutured in the usual manner, the skin being closely stitched by a buttonhole suture to prevent any leakage. A collodion dressing applied to the wound gives additional support. This dressing is reapplied as often as required till the skin wound is firmly healed. For one or two days afterward the patients usually complain of pain round the neighborhood of the button, but when this has passed off no further discomfort is experienced. If the quantity of peritoneal exudate is considerable a fluctuant swelling, almost of the size of the fist, forms within twenty-four hours in the subcutaneous tissues round the drain; but as absorption becomes established in the superficial vessels the swelling diminishes, till only a slight œdema remains to show that fluid is still escaping. When the exudate is small in quantity the swelling does not pass beyond the stage of œdema. It might be supposed that the intestines would adhere to the peritonæum round the edge of the button and thus shut it off from the peritoneal cavity, but in two patients, who died several weeks after the operation, and in whom a post mortem examination was made, no adhesions were found and the peritonæum was quite smooth up to the edge of the opening. He has performed this operation in several cases of ascites secondary to malignant disease, and also in cases of cirrhosis of the liver, with marked diminution of the abdominal distension, and to the great relief of the patients.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 18, 1910.

1. The Artificial Lowering of Air Pressure over the Lungs; a Method for the Aiding of the Circulation of the Blood, By Bruns.
2. More Concerning the Oxydasis Reaction in Tissue Sections, By Schultze.
3. Concerning the Permanent Anæsthesia of the Larynx in Tuberculosis by Infiltration of the Superior Laryngeal Nerve with Alcohol, By Roth.
4. Traumatic Heart Diseases, By Beckhaus
5. What Heart Diseases Form a Contraindication to the Use of Ehrlich-Hata's 606? By Grassman.
6. Technique and Doses of the Soluble Injections of 606, By Duhot.
7. Experiences and Observations in the Treatment of Syphilis with 606, By Taege.
8. A Case of Death after Using Ehrlich-Hata's 606, By Ehlers.
9. The Technique of Intravenous Injections in Children By Blacher.
10. X Ray Treatment of Uterine Myomata, By Bardachzi.
11. A Disadvantage of Iodine Benzin Disinfestion, By Puerckhauer.
12. The Importance of Disturbances of the Assimilation of Lime in the Origin of Rickets (*Concluded*), By Dibbelt.
13. The Hygienic Importance of Cremation, By Bittner.
14. The Sixtieth Birthday of Richard Hertwig, By Doflein.
15. The Question of the School Physician in the Country, By Niedermaier.

3. Permanent Anæsthesia of the Larynx with Alcohol.—Roth thinks that the anæsthetization of the larynx by the injection of alcohol down upon the superior laryngeal nerve is a simple procedure devoid of danger which is a valuable aid in the suppression of the troubles of swallowing in cases of laryngeal phthisis, and that it should not remain untried when other means employed to control the dysphagia have failed.

5. What Heart Diseases Form a Contraindication to the Use of 606?—Grassman acknowledges that this question cannot be answered positively yet, but points out that many heart lesions, particularly those of a syphilitic origin, are not contraindicative.

6. Technique and Doses of the Soluble Injections of 606.—Duhot rubs up 606 in a small glass mortar with ½ c.c. of pure methyl alcohol and then adds from 4 to 6 c.c. of physiological salt solution according to the dose. This he injects by means of a syringe with a platinum needle, from 2 to 4 cm. long. In order to find the best place for the injection he draws a line from the anterior spinous process of the ilium to the apex of the fold between the buttocks and chooses a point between the upper and middle thirds of this line. The patient is placed lying on his abdomen on the operating table, the needle is introduced and left a moment to see that it has not entered a bloodvessel, and then the injection is made slowly into the muscle. The needle is then withdrawn quickly and the tissue that has been held between the fingers is pressed back. The doses Duhot uses are larger than those employed in Berlin and Frankfort. The average dose for a man not organically enfeebled weighing seventy kilogrammes, is one gramme, about 0.14 per kilogramme, with a maximum dose of 1.10 grammes. The average dose for enfeebled men is 0.01 per kilogramme, that for women a little less. The advantages claimed for this method of injection are that it is no more painful than injection of the emulsion in the back, that it never provokes suppuration or swelling, such as have been observed after use of the "insoluble method," that it seems to produce a more efficient and quicker action, and that the injections made in this way last five minutes and are without danger of infection.

7. **Experiences with 606.**—Taege says that he used at first the weakly alkaline solution originally recommended, but that he found it so painful that he abandoned it. He then tried the neutral suspension, but real neutralization is practicable only in the laboratory and is impracticable for the physician. Wechselmann's suspension he found to cause less pain primarily, but after a while the pain came on without exception. He describes his own procedure thus: The point is broken off the tube and it is ascertained whether the powder that has been lying loosely in the ampulla is formed into little masses by the force of the entering air; if this is not the case the air must have slowly entered the tube before and another tube must be taken. A test tube is sterilized by passing it through a flame. In another test tube some water is boiled. The preparation is then placed in the first test tube and glycerin added in the proportion of two drops to one decigramme and triturated together with a glass rod. As the cold glycerin is not a dissolving medium a homogeneous mass is formed in a few seconds. As much of the freshly boiled water, while hot, is added as desired and the mixture stirred up with the glass rod. It then forms a clear fluid and is ready for injection. No special instrumentarium is necessary. Each injection must be freshly prepared. it should not be kept in stock. He reports a complete failure in a case of psoriasis, a slight result in the case of a man with papules on the upper lip, and in the case of a woman with tumor of the liver, and good results in the rest of his eighty-five cases. In six cases a toxic exanthem was observed, which was very different in the different cases. No intestinal, bladder, or ocular disturbances were observed. Headache followed two or three times. Two women vomited, one was in the second month of pregnancy and she showed a temperature of collapse. Very often the patients complained of troubled sleep though without pain.

8. **Death after 606.**—Ehlers reports the case of a man, forty years old, who had contracted syphilis eleven years before and had not been properly treated. Four years before inunctions and potassium iodide were started because of girdle pains over the lower part of the chest and pains in the tibiæ. but was not regular in his treatment. In April, 1908, he had an apoplectiform attack. In August, 1908, symptoms of dementia paralytica developed which improved under treatment. In the middle of July, 1910, he had another apoplectiform attack. On August 25, 1910, 0.05 gramme of 606 were injected in the scapular region almost without pain and with no local reaction. Increasing symptoms of poisoning appeared, exclusively on the part of the nervous system, none on the part of the digestive organs, and the patient died five days after the injection from paralysis of the heart. The temperature rose to 39.8° C. The autopsy revealed no other cause of death than acute parenchymatous degeneration of this organ. The results of the examination of the nervous system will be published later by Joergensen.

11. **Iodine Benzin Disinfection.**—Puerckhauer reports a couple of cases in which burns resulted from the use of iodine and benzin to disinfect the skin before operation. The burns were annoying, but not serious, and they throw no discredit on the method; they only show that care should be exercised in the application of these substances to places on the body where the evaporation of the benzin is materially interfered with.

WIENER KLINISCHE WOCHENSCHRIFT

October 20, 1910.

1. The Behavior of the Œsophagus in Enlargement of the Heart, By Kovacs.
2. Hereditary Deafness and the Law of Its Heredity, By Hammerschlag.
3. Anaphylaxis and Hæmolysin Poisoning, By Pfeiffer.
4. The Treatment of Syphilis with Ehrlich-Hata's Preparation, By Pick, with remarks by Ehrlich.
4. Ernst von Leyden, By von Jaksch.

1. **The Œsophagus in Enlargement of the Heart.**—Kovacs shows how the œsophagus may be either dislocated or compressed by the pressure of an enlarged heart. When dislocated the œsophagus is displaced to the right and backward, when compressed it is between the vertebral column and the left auricle. These conditions rarely give rise to subjective troubles.

4. **Treatment of Syphilis with 606.**—Pick has abandoned the injection into the back, which he formerly recommended, because an obstinate necrosis was caused in one case and severe pain lasting several weeks in another, and returned to the intragluteal method. In doubtful cases he tests the tolerance of the patient to the preparatión with a small dose which he finds causes neither oversensitiveness nor habituation on the part of the patient. The emulsion he uses is made as follows: The quantity of 0.6 gramme is placed in a porcelain dish and triturated carefully with 0.54 gramme, about nine or ten drops, of the official fifteen per cent. solution of caustic soda. The desired amount, from 5 to 10 c.c. of sterile water is then added during constant trituration, at first drop by drop. The fine suspension so produced is then tested with litmus paper and a neutral reaction obtained with perfect exactness by the addition as necessary of the soda solution or of dilute hydrochloric acid. The number of recurrences, as well as of refractory cases have increased since the publication of his first paper, but still the numbers are small. Of the first cases treated preventively only eight have remained under constant observation. Of these, in two no symptoms developed, but both gave a positive Wassermann reaction. In the other cases symptoms appeared sooner or later, part in the form of cutaneous symptoms, part in the form of anæmia, headache, falling of the hair, etc. The cutaneous symptoms were often distinctly of the character of recurrent exanthems.——Ehrlich, who read the manuscript of Pick's paper, adds the following remarks: He has long recognized that the hard chancre is most difficult to influence. He has had grave apprehensions that the methods at first followed of using Wechselmann's emulsion in the skin of the back weakened the efficiency of the means in three ways: 1. In that the newer preparation was less toxic, but also perhaps less efficient in so much as the stronger toxine was a stronger spirillocide. 2. It is *a priori* probable that the emulsion is less resorptive than the solution, and he is convinced that a faulty resorption took place in

this category of cases treated with the emulsion. 3. He thinks that the subcutaneous injection is less favorable for resorption than the intragluteal. For these reasons he fears that the final effect of the remedy may be obscured and many recurrences will be observed during this period. He favors the intravenous injection of 0.4 gramme, in strong persons of 0.5 gramme with forty-eight hours later intramuscular injections of 0.3 or 0.4 gramme divided between two or more places. Chancres should be treated locally with calomel, extirpation, cauterization, or hot air.

AMERICAN JOURNAL OF OBSTETRICS.

November, 1910.

1. Obstetrics and Modern Gynæcology, By A. A. Miller.
2. What has been Accomplished by Our Association (American Association of Obstetricians and Gynæcologists), By A. Vandeveer
3. Present Status of the Colon Tube, By H. W. Yates.
4. The Diagnosis of the Chronic Surgical Lesions in the Upper Abdomen, By C. N. Smith.
5. Problems in Uterine Cancer, By W. B. Chase.
6. Statistics of Cancer in the Female, By K. I. Sanes.
7. Recent Advances in the Technique of the Radical Abdominal Operation for Cancer of the Uterus, By J. H. Jacobson.
8. Diagnosis of Tubal Abortion and Rupture, By C. E. Congdon.
9. Results at Lebanon Hospital of Deferred Operations for Extrauterine Pregnancy), By R. Waldo.
10. Tumors of the Bladder, By J. F. Erdmann and J. F. McCarthy.
11. Puerperal Wound Intoxication and Wound Infection, By H. Schwarz.
12. Serum Therapy and Bacterial Vaccines in the Treatment of Puerperal Septichæmia, By H. Schwarz.
13. Adenocarcinoma of the Kidney, By J. G. Sherrill.
14. The Breast of the Expectant Mother: Its Care before and during the Period of Lactation, By F. Reder.
15. Acute Pancreatitis, By J. W. Poucher.
16. Acute Hæmorrhagic Pancreatitis, By J. W. Keefe.
17. Two Cases of Perforative Gastric Ulcer, By T. B. Noble.
18. Importance of Public and Private Hospitals in the Education of Young Physicians and Nurses and the Clinical Institutions of Practitioners, By J. Price.
19. Torsion of the Great Omentum, By W. J. Gillete.
20. Pelvic Reflexes, By R. T. Morris.
21. Secondary Repair of Complete Perineal Lacerations; the Technique and Results, By E. J. Ill.
22. Cæsarean Section, the Pregnant Uterus Being within an Umbilical Hernia, By J. H. Carstens.
23. High Operation in Cæsarean Section. Illustrated by a Case Report, By W. H. Hamiston.
24. Cæsarean Section by the Small Median Incision above the Umbilicus, By A. B. Davis.
25. Intussusception in Infants, By H. E. Hayd.
26. Conservatism in Operations on the Uterine Appendages. By L. C. Morris.
27. Intravenous Injection of Magnesium Sulphate in Bacteriæmia, By R. R. Huggins.
28. Fibromata of the Uterus Complicating Pregnancy, Labor, and the Puerperium, By R. W. Lobenstine.
29. Two Rightsided Femoral Hernias Coexisting in the Same Patient, By N. S. Scott.
30. Comparative Merits of Medical and Surgical Treatment in the Reduction of Maternal and Fœtal Mortality in Puerperal Eclampsia, By E. G. Zinke.
31. Scarlatina, By J. F. Bell.
32. Purpura, By T. J. Etterich.

3. **Present Status of the Colon Tube.**—Yates illustrates his article with a series of skiagraphs and offers the following conclusions: 1. Soft rubber tubes are seldom admitted into the normal colon. 2. If an endeavor is made to force the tube upward even with gentle manipulation it will become coiled in the rectum and do harm by pressure irritation and inability to retain an enema. 3. It is impossible to tell when the tube is coiled, in about half the cases, even if it is suspected. 4. Colon tubes as such are of no value, since they do not reach the colon and are mischievous as we try to force them higher up. 5. Water or other fluid injected into the rectum a distance of four or five inches is carried to the colon and may be found in the cæcum in ten minutes. 6. There is reason to believe that reversed peristalsis is set up when fluids are injected into the rectum. 7. The introduction of a tube more than five inches for colonic irrigation or the injection of therapeutic enemata is useless and is likely to defeat the object desired.

5. **Problems in Uterine Cancer.**—Chase thinks three problems in this disease are of paramount interest, its ætiology, its antidote, and its pathology. There is still too much indifference in the profession to the importance of the subject, and especially to early diagnosis. It is believed that one woman in fourteen dies of this disease, the mortality being greater after the age of thirty-five. The suffering which accompanies it is one of its most distressing features. Symptoms which should always demand investigation in women of mature years are purulent vaginal discharge, irregular menstruation, menorrhagia, and other symptoms incidental to menstruation, to the traumatisms of parturition, and to other causes. Early hysterectomy offers, at present, the best chance of cure. If this is not feasible one should perform high amputation of the cervix and also remove all vaginal tissue which may be involved. If the uterus is fixed hysterectomy is not indicated. Objections to palliative treatment are the inability of the caustics used to limit their destructive action, and the pain which they cause.

6. **Statistics of Cancer in the Female.**—Sanes states that hospital statistics carefully prepared can be of great use to the profession. The modern hospital organization and facilities, the increase in the number of the hospitals throughout the country, their more general use, and the increasing tendency of the profession and the people to resort to surgical measures emphasize the value of hospital statistical information. To get accurate information each hospital must have a careful, conscientious statistician, and physicians and surgeons attending hospitals must see that their diagnoses are carefully reported. Many hospitals issue no reports at all and in others the reports are quite inaccurate and defective. Examples of hospitals with carefully classified reports are Bellevue, of New York, and the Massachusetts General and the City Hospital, of Boston. Operative hospital statistics are clearly and fully reported at the Pennsylvania Hospital in Philadelphia and the Roosevelt Hospital in New York.

ANNALS OF SURGERY

November, 1910.

1. Atony of the Bladder without Obstruction or Signs of Organic Nervous Diseases, By J. W. Thomson Walker.
2. Certain Congenital Strictures of the Ureter, By John T. Bottomley.
3. Primary (Congenital) Hydronephrosis, By Charles Greene Cumston.

4. Recent Developments in Pyelography, By William F. Braasch.
5. Note on the Removal of Carcinoma of the Fundus of the Urinary Bladder, By Francis R. Hagner.
6. Intraperitoneal Cystotomy, By Chauncey E. Tennant.
7. A Chart to Aid in the Treatment of Cystitis by Distentions of the Bladder, By Howard A. Kelly.
8. Is the Sac of a Femoral Hernia of Congenital Origin, or Acquired? By R. W. Murray.
9. Silver Wire and Linen Thread for the Cure of Hernia, By Joseph Wiener.
10. A Pneumatic Tourniquet, By Frank E. Bunts.
11. The Control of Hæmorrhage by Means of Forceps Tourniquet in Major Amputations, By J. Lynn Thomas.
12. Statistics about Fractures and Refractures of the Patella, By Edred M. Corner.

1. **Atony of Bladder.**—Walker reports twelve cases of varying degree of atony of the bladder. The urethra showed no sign of obstruction, and the prostate was healthy; there were no signs of organic disease of the nervous system. He found that the power of expelling the urine was diminished to a varying extent. The condition of the muscular wall as shown by the cystoscope was very striking in all these cases. In all of them there was marked trabeculation. Where the trabeculation was moderate in degree it affected the lateral walls low down near the trigone, and, to a less degree, the apex of the bladder. One side of the bladder might show trabeculation while the other was smooth. In some of the cases a tense, sharp band of muscle passed across a portion of the bladder wall and the wall above or below this was deeply hollowed. Where the trabeculation was present in a marked degree, it was universal, all parts of the bladder being affected, except the trigone, which remained unaltered. The larger muscle bundles were sharply defined and widely separated; they stood out like round cords and branched into smaller strands, which disappeared in the general network. Between these larger bundles there were saucer shaped depressions of varying depth, the walls of which showed fine secondary interlacing muscle bundles. The sensibility of the bladder in these cases varied. In two cases it was certainly blunted, if not abolished. The patients felt neither the sharp sensation of the contact of urine with the mucous membrane of the prostatic urethra, nor the feeling of tension and weight above the pubes and in the perinæum or penis that is experienced by normal individuals. These patients would go through the whole day without passing water and without discomfort. On the other hand, there were three cases in which frequent micturition and urgency were prominent symptoms. In these cases the urine did not show evidence of cystitis, and the cystoscope displayed no inflammation. The mucous membrane of the bladder was undoubtedly excessively sensitive in these patients. In the remaining cases there did not appear to be either diminution or increase in the sensibility of the bladder.

4. **Developments in Pyelography.**—Braasch describes the technique of pyelography, that is of injecting into different parts of the urinary tract a substance which is impenetrable to the Röntgen ray. He concludes that radiography and cystoscopy, working together, make it possible to demonstrate many conditions which either would fail to demonstrate alone. He has frequently found the injected radiograph to be of considerable practical value in demonstrating the following conditions: 1. Normal pelvis; 2, hydronephrosis; 3, pyonephrosis; 4, pyelitis; 5, renal tuberculosis; 6, renal tumors; 7, abdominal tumor distinction; 8, horseshoe and median lying kidneys; 9, solitary kidney (unsymmetrical); 10, cystic kidney; 11, distinction of extrarenal shadows; 12, localization of renal shadows; 13, aid to ascertain renal functional capacity; 14. identification of ureteral obstruction; and, 15, hydroureter.

9. **Silver Wire in Cure of Hernia.**—Wiener reports twenty-nine cases of hernia in which he used silver wire. He remarks that chromic catgut is an unreliable suture material. Pagenstecher linen is an excellent suture material. Silver wire, in some form, is a very desirable suture material in many recurrent cases; and at primary operations where the tissues are poorly developed. Immediate recurrence, in uninfected cases, is usually due to chromic gut. He concludes that there would be fewer recurrences if chromic gut sutures were entirely discarded.

12. **Fractures of the Patella.**—Corner gives some statistics about fractures of the patella. He found that fractures in the lower half of the patella are the most frequent, eighty-three per cent. Triangular shaped patellæ are the most common; oblique shaped patellæ come next. Transverse fractures are the most frequent; comminuted fractures come next. Three males fracture their patella to one female. Fractures of the right patella are a little more frequent than of the left. Two underwent operation to every one which did not. Fracture of the patella is most frequent between the ages of thirty to forty. The patella is the most frequently refractured bone in the body. After operation, sixty-nine per cent. of refractures occur in the first year after the injury. After treatment other than operation, eighty-six per cent. of refractures occur after the first year. The percentage frequent of refractures is approximately the same after operative as it is after nonoperative treatment. The advantages of operation are solely in the quick and complete recovery of the function of the limb.

PRACTITIONER.

November, 1910.

1. Pyometra, By Sir Halliday Croom.
2. The Use of Plates and Screws in the Operative Treatment of Fractures, By W. Arbuthnot Lane.
3. Some Points in the Modern Treatment of Rheumatism, By William Murrell.
4. Congenital Hypertrophic Stenosis of the Pylorus, with Special Reference to Its Treatment, By James H. Nicoll.
5. The Ætiology, Treatment, and Pathology of Venereal Diseases as We See Them To-day, with Special Reference to "606," By J. E. R. McDonagh.
6. The Clinical Aspect of Intussusception, By J. E. Adams.
7. Vicious Circles Associated with Diseases of the Eyes, By Jamieson B. Hurry.
8. A Short Note on the Treatment of Vomiting Following Chloroform Anæsthesia, Including the Use of Adrenalin, By J. W. Keay.

9. The Open Method of Ether Administration, with Some Modifications, By G. A. H. BARTON.
10. The State Prevention of Tuberculosis, By DUKE MULLOY.
11. Primary Diphtheria of External Urinary Meatus, By ALFRED HOWELL.
12. Pulmonary Œdema and Death, By HORATIO MATTHEWS.

3. **Modern Treatment of Rheumatism.**—Murrell says that muscular rheumatism, being a condition of uncertain origin and indefinite duration, readily lends itself to excursions in treatment. Many remedies are prescribed, and to the drug last taken will be awarded the credit of curing the patient. In an acute case of myalgia, such as follows a bout of dancing, in a young woman of poor physical condition or who is out of training, the pain and discomfort are great, and a hypodermic injection of morphine may be given, to which no reasonable objection can be urged, especially as the relief afforded is almost instantaneous. In chronic painful muscular conditions, potassium iodide is prescribed, and does good, from the fact that a large proportion of men in what are called the better classes have at some period of their lives suffered from syphilis. What that proportion is it is difficult to say, for we have no data upon which to form an opinion. Another popular remedy for this so called rheumatism is the ammoniated tincture of guaiacum given in milk in three drachm doses. Apart from internal remedies, external applications, especially those of a stimulating nature, are in high repute. A liniment of aconite, belladonna, chloroform, and capsicum is the favorite formula. Ether spray, or freezing with ethyl chloride, is another valuable mode of treatment affording relief even in cases of long standing. Poultices, turpentine fomentations, and the application of an ice bag are in common use. Mention, too, may be made of acupuncture, the needle being inserted for a couple of inches with antiseptic precautions, care being taken to avoid important motor nerves. For some years past he has used as a local application oleum succini obtained by the distillation and rectification of amber. It is stimulating, antispasmodic, and counterirritant. and is usually given internally in doses of from 5 to 15 minims. When in cases of acute rheumatism or rheumatic fever sodium salicylate is given in twenty grain doses every four hours, the pain in the joints and the initial amygdalitis are favorably influenced and the temperature falls by crisis or lysis within forty-eight hours, although the occurrence of cardiac complications is in no way lessened. It is impossible to get better results than this, and it is doubtful whether the treatment of rheumatic fever has materially advanced during the last thirty years. Cases of hyperpyrexia are now met with, thanks to the systematic use of cold sponging when the temperature reaches 104° F. Rheumatic fever being a disease of somewhat uncertain bacteriological origin, is not likely to be benefited by a serum or vaccine. In acute cases of rheumatoid arthritis serum is undoubtedly of much value, although the difficulty which presents itself is in obtaining fluid from the smaller joints. When this is the case, a stock serum has to be employed, and considerable uncertainty exists in the selection of such a serum, it being a not uncommon experience to find that one serum fails while another succeeds. The dose employed is 30 c.c. given in a series of 10 c.c. in the course of twenty-four hours. Often a good reaction is obtained, and this is more likely to be the case in acute cases than in those of long standing. Of late sera have to a great extent been superseded by vaccines, but here again the difficulty lies in obtaining a sufficient amount of fluid. Of internal remedies the iodides, quite apart from the possibility of a syphilitic taint, are useful, but to do good they must be administered in large doses. Arsenic is another remedy of repute, but its action is slow, and it must be given for weeks or even months. He has used oil of celery with much success, on the ground that it acts as an intestinal antiseptic. It is given internally in doses of from 5 to 15 minims. A good combination is a mixture containing fifteen minims of tincture of actæa racemosa with five minims of tincture of gelsemium, three times a day. As a local measure, the application of a strong solution of iodine to the joints will be found useful. Hot applications of all kinds are useful, and may be applied in the form of poultices, compresses, mud, moor, and peat baths, and douches containing sulphur. A hot bath containing two ounces of liquor ammoniæ fortis in thirty gallons of water may be used at bedtime. Of manifold advantage are massage, electricity, and the various forms of vibration.

5. **Pathology of Venereal Diseases.**—McDonagh speaks of gonorrhœa, balanitis, and syphilis, making special reference to Ehrlich's 606.

9. **Open Method of Ether Administration.**—Barton has found that "open ether" offers the best and safest means at present known for procuring narcosis, that it is particularly suitable for use in the practice of those who are not specialists in this branch of medicine; that by using his apparatus "open ether" may be administered with economy and convenience; and finally, that if the method does not abolish shock and after vomiting, it at any rate tends considerably to their mitigation. His inhaler is made of metal and consists of a chamber with an attachable face piece. The chamber is cylindrical, being open at the top and having another opening about the junction of the middle and lower third communicating with the face piece. It is lined with lint which is held in place by a clip. The lint dips down into the ether contained in the well at the bottom of the chamber; the amount of ether capable of being conveniently held in the well is about one and a half ounces. This is continuously soaked up by the lint, which presents an evaporating surface of some twenty or more square inches. The face piece is of the Roth-Drager type and is fitted with an expiratory valve. In addition there is a movable inspiratory valve. This may be dispensed with in cases where valves are deemed inadvisable, or may be fixed in one of two positions, either between the chamber and face piece, or into a metal cap which is made to fit the opening at the top of the chamber. The latter position gives a stronger vapor. As designed the apparatus is intended for use with the patient's face turned to one side. Owing to the rotation of the face piece on its attachment to the chamber it is equally available for a right or left position of the face.

Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Twenty-third Annual Meeting, held in Syracuse, N. Y., September 20, 21, and 22, 1910.

The President, Dr. Aaron B. Miller, of Syracuse, in the Chair.

The Present Status of the Colon Tube.—Dr. H. Wellington Yates, of Detroit, in connection with his paper showed skiagraphs to prove, first, that fluids injected into the rectum were carried to the cæcum; second, that no device was necessary for this end except a small male catheter; third, that within ten minutes this fluid could be skiagraphed in the cæcum. Some of these pictures had been taken with the patient in the dorsal position, some in the ventral, and some in Fowler's. The mixture was always injected by a small rectal tube or large male catheter inserted five inches. If done slowly, no trouble was had in injecting a quart even in the smallest subjects.

His observations and conclusions were: 1. Seldom if ever were soft rubber tubes admitted into the normal colon. 2. When an endeavor was made to force the tube upward, even by the gentlest manipulation, It was found to coil itself up in the rectum, and there did positive harm because of pressure irritation and the consequent inability to retain the enema. 3. In perhaps half the instances it was impossible to tell when the tube was coiling up on itself even when one suspected it. 4. Colon tubes as such were of no value, because they did not reach the colon, and they were mischievous in proportion as one endeavored to force them high up. 5. Water or fluid injected four or five inches into the rectum was carried upward into the colon and might be found at the cæcum in ten minutes. 6. There was good reason to believe that a reversed peristalsis was set up when fluids were injected into the rectum. 7. The introduction of a tube more than five inches for colonic irrigation or therapeutic enemata was useless and likely to defeat the object desired.

Dr. Lewis S. McMurtry, of Louisville, presumed that the experience of all the members was like his own, that they had satisfied themselves several years ago that they were practising a deception upon themselves by the use of what was called high enemata. It had been discovered that what they formerly called high enemata were not high enemata; that if one introduced a soft rectal tube into the bowel and kept on passing and passing the tube, it reached to the sigmoid and then began to coil upon itself and it did not pass further into the bowel; so that years ago he had abandoned all efforts at what was known as the high enema, recognizing that it was a deception. It seemed this had an important bearing upon some features of treatment of the colon, especially ulcerative conditions. For instance, if we opened the cæcum, we could irrigate the colon from below or above, but if there was no opening in the caput coli, we should find that it was almost impossible with the patient in any position to get water up into the transverse and ascending colon, but if there was an opening there and we threw water in, the gas would pass out of the opening in the cæcum and gave us a means of medicating the entire mucous surface of the colon.

Dr. J. Garland Sherrill, of Louisville, agreed with Dr. McMurtry.

Dr. Louis Frank, of Louisville, wished to speak of the therapeutic value of injections of fluids for medication in bowel lesions situated high up by the use of the inverted posture.

Dr. Francis Reder, of St. Louis, said that Dr. Soper and he had done considerable work in the field of rectal inflation and the injection of water into the lower bowel, endeavoring to get it as high up as possible, and they had found that if they took an ordinary colon tube and introduced it into the bowel it was impossible to get above the promontory of the sacrum. The ordinary soft tubes coiled on themselves and the fluids injected did not reach beyond what was called the shelf of the rectum.

Dr. Yates stated that he had proved conclusively that water did not pass into the colon with the patient in the horizontal position. The purpose of his paper was to show the possibility of medicating not only the rectum but the sigmoid and colon with fluids.

The Diagnosis of Chronic Surgical Lesions in the Upper Abdomen.—Dr. Charles N. Smith, of Toledo, in this paper stated that the diagnosis of these lesions was made with accuracy by the anamnesis alone. The distinction of cholelithiasis from ulcer demanded the recognition of the initial symptoms, which were frequently overlooked. The accepted symptomatology of cholelithiasis and ulcer was largely that of their terminal events. The most striking feature of ulcer was periodicity of painful attacks alternating with intervals of relief. As complications occurred the attacks were more severe, becoming nearly continuous. In cholelithiasis the stomach distress, compared with the pain of ulcer, was of much less intensity, occurred sooner after the taking of food, than was the pain of a full stomach, and did not progressively increase and reach its height in less than from two to five hours after meals. Cancer of the stomach was generally a sequence of ulcer, symptoms of the latter gradually merging into those of the former.

Vomiting might or might not be a trustworthy symptom in cancer. Anæmia was a most important symptom. Chronic pancreatitis being largely a terminal event in cholelithiasis, the diagnosis of the former was facilitated by recognizing the initial symptoms of the latter. Valuable pancreatic symptoms were found in the fæces. Chemical and microscopical examinations were necessary. Cammidge's reaction was of questionable value. In movable kidney, during Dietl's crises, the swollen and tender kidney, especially when jaundice was present, might be mistaken for an inflamed and distended gallbladder. The appendix might mimic many of these lesions.

Dr. Robert T. Morris, of New York, said that one could not always make a diagnosis of the presence of gallstones. We should not fall into the trap of speaking of cholelithiasis. We should not make that diagnosis. It was a dangerous thing.

We should speak of cholecystitis, as the gallstones were merely incidental to cholecystitis.

Dr. Joseph Price, of Philadelphia, stated that if the internists made diagnoses in these cases early and referred them to surgeons for operation promptly many more lives would be saved than now.

Dr. Roland E. Skeel, of Cleveland, said that if one wished to secure so complete and certain a history as was necessary to make a diagnosis in the cases under discussion, unusually intelligent patients must be met with, but he did not see any possibility of the average patient giving such an accurate history of his case as would lead the surgeon to make a diagnosis from that alone.

Problems in Uterine Cancer.—Dr. Walter B. Chase, of Brooklyn, first discussed the frequency, suffering, and mortality attending uterine cancer, which were a sufficient argument why professional sentiment should be thoroughly awakened to the necessities of the situation. In the present state of our knowledge, early extirpation of the uterus offered the best chance of cure. Where there was considerable involvement of the vaginal structure, the first indication was high amputation of the cervix and removal of the vaginal involvement. If the uterine stump did not heal, hysterectomy should usually be undertaken, provided there was normal mobility of the uterine body. Vaginal hysterectomy subsequent to cervical amputation was difficult if not impracticable. Fixation of the uterus, if not dependent upon other coexisting causes, contraindicated hysterectomy. If the parametria were involved, radical measures were contraindicated. When, subsequent to the removal of the cervix and the vaginal growth, hysterectomy was expedient, the abdominal route should be chosen because vaginal hysterectomy was neither easy nor practicable and because there should be as little interference as possible with the remaining cicatrix. The value of hysterectomy for cancer of the body as a secondary operation, though not recognized by the average practitioner, had a value which could not be gainsaid in a certain class of cases. The writer objected to the palliative treatment of uterine cancer most in vogue, which consisted of the application of potent escharotics, both on account of the inability to limit the area of their destructive influences and the violent pain attending their application. The thermocautery was the palliative measure *par excellence.* The electric cautery left nothing to be desired, and if one was under the necessity of using a Paquelin, which was practically as satisfactory, it was hazardous to attempt the operation with a single apparatus. A variety of straight and curved platinum knives were needful. For securing the best results tact was needful in protecting the vaginal walls from excessive heat, and skill in removing all diseased structures compatible with the anatomical relations of the healthy and diseased structure. His results from the use of the thermocautery had been very satisfactory. The *modus operandi* of the thermocautery treatment seemed to be, first, its power to destroy or inhibit specific germs beyond the area of actual destruction of tissue; second, its closing the lymphatics, thereby limiting absorption; third, its promoting healing, diminishing hæmorrhage and purulent discharges; fourth, when the destruction of malignant growth extended to normal structure, its facilitating the advent of healthy cicatrization.

Dr. Chase then spoke of the necessity of disseminating such information among women as would give them such an appreciation of the necessity of the situation regarding cancer as to lead them to seek assistance early. He also urged that public interest be awakened among philanthropic men and women, as had been done for those suffering from tuberculosis, so that facilities might be provided for the care of the numerous cases of uterine cancer in those without financial resources. He introduced a series of resolutions to that end and hoped that the association would consider these questions in a practical way, and he invoked the mature judgment, cooperation, and influence of the members in the formation of a plan and the promulgation of measures by which the condition of women with cancer might be ameliorated.

Statistics of Cancer in the Female.—Dr. K. I. Sanes, of Pittsburgh, read a paper based on some statistical data collected from the latest eight annual reports of the Bureau of the Census and the latest reports of 219 hospitals. The figures showed that the proportion of deaths from cancer to the total number of deaths from all causes was in females 1 to 17.7; in males 1 to 33.4; the proportion of deaths from cancer in the past thirty-five years to the total number of deaths in the past thirty-five years was, in females 1 to 9.8; in males 1 to 18.5. Taking the relative frequency of cancer in both sexes, it was found that according to the mortality statistics of the Bureau of the Census sixty-two per cent. of those that died of cancer were females and thirty-eight per cent. males; according to the hospital statistics 66.5 per cent. were females, and 33.5 per cent. males. Cancer was met with about twice as frequently in females as in males. There was clearly shown an increase in cancer from 1900 to 1908. In the eight years there was an increase in cancer mortality from one in 22.8 deaths to one in 16.6 deaths, or from 63 per hundred thousand population to 74.3. The question was frequently raised as to whether the gradual increase in mortality was not due to changes in the methods of reporting deaths and to the greater accuracy in the diagnosis of cancer, especially in view of the slight variation for the five years between 1903 and 1907.

Hospital statistics, if carefully and properly compiled, could be utilized to great advantage by the profession in many ways. The modern hospital organization and facilities, the gradual increase of the number of hospitals all over the country, the more general use of hospitals by the sick, the greater readiness by the profession and patients to adopt surgical measures for surgical diseases—all this made the hospital the most valuable source of statistical medical information. But to get accurate information, not only must each hospital have a careful, conscientious statistician, but the visiting members of the hospital staff must see that their diagnoses were carefully reported in the hospital records.

Dr. William H. Humiston, of Cleveland, had had but five cases of what was generally spoken of as inoperable cancer of the uterus, and in these he had resorted to the Wertheim operation, making a very wide dissection. Four of the patients were still living.

Dr. Ralph Waldo, of New York, said there had been a decided advance in operative work for the treatment of cancer of the uterus. He believed that to-day almost any one who was competent to pass judgment would advise a radical operation on any woman forty-five or fifty years of age who had a persistent hæmorrhage from the uterus, unless there was a polypus or something of that kind which he could thoroughly demonstrate to be the cause of hæmorrhage. One occasionally took out a uterus at that age which was not the seat of tumor, but one took out many more uteri that were the seat of incipient carcinoma. Generally he preferred the vaginal route.

Dr. Maurice I. Rosenthal, of Fort Wayne, Ind., remarked that when one got a case of cancer of the uterus in its early history it was a pure accident. Some carcinomata were less malignant than others, and when we were dealing with carcinoma of the fundus of the uterus we were ordinarily dealing with a carcinoma that was less malignant, and a destructive operation through the vagina in such a case was uncalled for. When we were dealing with carcinoma of the portio vaginalis we were dealing with that form of cancer which was not so malignant. In such cases ordinary hysterectomy done with the cautery would give as good results as any other method. When we were dealing with carcinoma which began in the endometrium higher up, it was a serious malignant growth for which practically no operation would do any good. He had done the Wertheim operation, and reported fifty-seven cases in the *New York Medical Journal* some years ago, with good results in that class of cases.

Dr. J. H. Carstens, of Detroit, agreed with Dr. Rosenthal and Dr. Waldo that it was largely a question of early diagnosis. When a woman had cancer which was so far advanced that the lymphatics and other structures were involved, it was better to let her alone and trust to the *vis medicatrix naturæ*.

Dr. Thomas B. Noble, of Indianapolis, looked upon cancer of the cervix or of the uterus as an analogue to carcinoma of the breast. It should be so considered and diagnosticated and decidedly so with regard to treatment.

Dr. Joseph Price, of Philadelphia, looked upon the vaginal operation as one of the simplest in surgery, but in operating for the removal of carcinoma of the uterus where wide and deep dissection was necessary it was better to operate through the abdomen.

Dr. Francis Reder, of St. Louis, thought the whole question resolved itself into early diagnosis, skilled operative measures, and education of patients.

Dr. Edward J. Ill, of Newark, N. J., said that in operating for cancer of the uterus no surgeon could open up an extensive area of cellular tissue without spreading the cancer cells. The safest operation, where there was any extent of cervical carcinoma, was to start from above, separate all adhesions, separate all attachments to the uterus and to its surroundings, and then proceed from below and lift the mass right out and cut it off with a cautery as had been suggested by Werder.

The Treatment of Obstruction of the Bowels due to Malignant Neoplasm.—Dr. Maurice I. Rosenthal, of Fort Wayne, Ind., in this paper reported advanced cases of carcinoma of the bowel treated by simple anastomosis without resection. He spoke of the advantages of this method in such cases. He described a method by which anastomosis was accomplished before the bowel was actually opened, making the bowel suture aseptic. He described the operation in detail, illustrating each step. No new or complicated instruments were required. He spoke of the advantages of the Murphy button in situations that were not sufficiently accessible for this operation. He reported cases of radical resection of the malignant bowel and spoke of the futility of resection unless it could be done radically. He gave the general results from operations for cancer of the bowel as shown by a review of 328 cases from the literature.

His conclusions were as follows: 1. Obstruction of the bowel due to carcinoma was not so hopeless as to cure by radical operation. Incomplete excision of all cancerous tissue must necessarily result in recurrence of the growth. 2. Anastomosis without resection of the malignant growth should be the operation of election in obstruction due to cancer where the radical operation, complete excision, was impossible. 3. Anastomosis without resection low in the pelvis, where the bowel was accessible with difficulty, could be successfully accomplished with the assistance of the Murphy button. 4. Anastomosis without resection probably bore the same relation to cancer of the bowel as did gastroenterostomy to cancer of the pylorus. 5. The clamp and suture method of bowel anastomosis as described was practical, rapid, and trustworthy, and applicable in a large variety of cases requiring resection or anastomosis.

The Diagnosis of Tubal Abortion and Rupture.—Dr. Charles E. Congdon, of Buffalo, said that the general indication for operative interference as promptly as possible could not be gainsaid. Schauta, for example, after a careful study of the literature, collected 123 operative cases, with a mortality of 5.7 per cent. and 121 cases treated palliatively, with a mortality of 86.89 per cent., although in another series of more carefully selected cases he found the mortality by palliative treatment to be only 65 per cent. To recapitulate the diagnostic features, he would say: 1. There was sudden pain, nearly always, the exceptional cases being those with sudden collapse, as in two cases which he reported in July, 1909. 2. Uterine hæmorrhage occurred within forty-eight hours after the initial pain. This symptom and sign was common to all cases of rupture or abortive tubal pregnancy. 3. Add collapse and the diagnosis was complete. If collapse was lacking or slightly marked, it was on account of gradual internal hæmorrhage, when on examination the cul-de-sac would show a progressive bulging.

(To be continued.)

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Mentally Deficient Children: Their Treatment and Training. By G. E. Shuttleworth, B. A., M. D., Medical Examiner of Defective Children to the Willesden Education Committee, and W. A. Potts, B. A., M. D., Consulting Medical Officer, National Association for the Feeble Minded. Third Edition. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. 234.

The first edition of this excellent work was published fifteen years ago and at once took its place as a standard upon the subject of feeble minded children. Dr. Shuttleworth was the sole author. In the present edition he has received the cooperation of Dr. Potts, whose reputation as an authority upon the subject is well established. The work has been enlarged and brought up to date, and is an admirable presentation of the best thought upon the subject of feeble minded and idiotic children. Treatment receives ample consideration and an appendix gives much information regarding homes and institutions for the feeble minded both in this country and abroad.

A Textbook of Mental Diseases. By Eugenio Tanzi, Professor of Psychiatry in the Royal Institute of Higher Studies of Florence. Authorized Translation from the Italian by W. Ford Robertson, M. D., C. M., Pathologist to the Scottish Asylums, Edinburgh, etc., and T. C. MacKenzie, M. D, F. R. C. P., Edin., Medical Superintendent, Inverness District Asylum, etc. New York: Rebman Company, 1910. Pp. xvi-803. (Price, $7.)

In this book the author has aimed at producing a work that will satisfy the needs of the practical physician and at the same time the alienist who has worked under the recent classifications and methods of Kraepelin and other modern authorities on mental diseases.

Nine out of the twenty-six chapters are devoted to the causes and anatomy of mental diseases and a practical study of psychology, the author varying not a little from Kraepelin in his classification. Under toxic infections and autointoxications he includes four groups: 1. Amentia—hallucinatory, apathetic, slight (acute systematized insanity), and very severe (acute delirium). 2. Uræmic psychoses. 3. Thyreoid psychoses. 4. Progressive paralysis.

He unites, under affective psychoses, melancholia, mania, and circular psychoses, not using the term manic depressive insanity as a definite name for the entire group. Under constitutional psychoses he includes constitutional neurasthenia (obsessive psychoses), hysteria, and epilepsy. Dementia præcox appears in its three forms, hebephrenic, catatonic, and paranoiac. Under degenerative mental anomalies he classifies perversion of the sexual instinct, constitutional immorality, paranoia, and intellectual feebleness (hereditary imbecility). The reader will miss a general group of critical insanities of involution, including melancholia, presenile delusion of persecution, and senile dementia. Every classification that uses the term amentia has proved a stumbling block to the general reader, who finds more difficulty in distinguishing between dementia præcox and amentia, or acute confusional insanity, than between any two types of mental disease that come to his attention.

To the American reader the chapter on pellagra is of great interest, and at once brings up the question of how much of the insanity among Italian immigrants, together with many obscure forms of spinal disease, may possibly be due to pellagra. A combination of erythema, or an obscure chronic eczema, muscular weakness, diarrhœa, and other disturbances of spinal origin with mental depression, delusions, or confusion is fairly typical of pellagra in Italy, and it should appear among recent immigrants from those sections of Italy where it yields four per cent. of the population of the asylums.

Under the heading Constitutional Immorality there is a concise and valuable study on criminology, which is one of the most interesting chapters in the book. The writer does not believe that the signs of degeneration that Lombroso and his followers have collected and classified with such care are necessarily associated with immorality of character even in its most advanced forms. He also objects to the free association of criminality with epilepsy, as a relic of former loose study of epilepsy as a neurosis without natural causes and without precise symptoms. He distinguishes two classes; the immoral from impulsiveness, or excess of egoism, restlessness or individualism, and the immoral from deficiency of sympathy for others, and therefore also of altruism, compassion, and regard for public opinion. Constitutional immorality should be diagnosticated only when there is a continued and progressive destruction of the moral sense. The work is well translated, copiously illustrated, and thoroughly indexed. It is a useful addition to the literature of psychiatry, and particularly valuable as showing the most advanced work of the Italian school.

A Plea for the Home Treatment and Prevention of Scarlet Fever. By Robert Milne, M. D., Ch. M., Medical Officer of Dr. Barnado's Hospitals and Homes. New York: William Wood & Co., 1910. Pp. 7-80. (Price, $1.)

This little book advocates a radical procedure which the author asserts will prevent the spread of scarlet fever and mitigate its severity. As physician to Dr. Barnardo's homes, which shelter 8,600 children, he has had a wide field of experience. The statistics which he gives are very striking and seem to demonstrate the soundness of his belief. He began his treatment many years ago with inunctions of carbolic oil, one in ten. For twenty-five years he has employed eucalyptus oil, presumably undiluted. His method is quite different from oil inunction as usually practised. For the first four days he has it rubbed over every inch of the body, including the scalp, twice daily and then once a day until the tenth day of the disease. The aroma modifies the throat and kidney troubles, and he says that he has not observed either ear or nose complications. The tonsils he swabs with one in ten carbolic oil every two hours during the first day. This relieves the pain and permits the patient to swallow. The patients are not isolated from other children. He asserts in the most positive terms that the disease will not be communicated to others if the treatment is thoroughly carried out. The treatment has been tried in measles, but has not been so effective, the disease being contagious before the eruption appears. This teaching is certainly radical, but is in line with certain beliefs regarding the communication of scarlet fever which have been receiving much consideration of late years. The work is worth careful study by physicians who must treat scarlet fever, especially those in charge of institutions.

Bakteriologisch-chemisches Praktikum. Die wichtigsten bakteriologischen, klinisch-chemischen und nahrungsmittelchemischen Untersuchungsmethoden für Apotheker, Chemiker, Aerzte und Studierende. Von Dr. Joh. Prescher, Nahrungsmittelchemiker in Cleve, und Viktor Rabs, Apotheker und Chemiker in Röthenbach b. Lauf. Zweite, vollständig umgearbeitete und erweiterte Auflage. Mit 61 Abbildungen im Text, 4 Tafeln and 2 Tabellen. Würzburg: Curt Kabitsch, 1910. Pp. vi-314.

Within the compass of 303 pages of text, exclusive of eleven pages of indexes, four colored plates, and two tables, the authors have condensed the essentials of all that is necessary for the analytical examination of such natural and pathological bodies as physicians, pharmacists, bacteriologists, and students are commonly called upon to examine. The technique of bacteriological investigation is explained concisely but thoroughly, the apparatus employed being fully described and freely illustrated. The new second edition has been brought fully abreast of modern research, and several of the chapters—particularly those on the analysis of blood, the stomach and intestinal contents, and the urine—will be found especially informing and useful for medical practitioners. There are also chapters on the examination of milk, butter, margarine, cheese, and wine. The colored plates are remarkably well executed, among the best we have seen. The various reactions are succinctly explained and formulas for reagents, stains, etc., are numerous. The typography of the volume is all that could be desired and the arrangement of its contents makes it a convenient and useful textbook.

MEDICOLITERARY NOTES.

When the aviators reached the ground after the recent meet, they began promptly to quarrel among themselves, and, unlike little birds, did not in their hangars agree. Their mutual attitude is perfectly comprehensible on psychological grounds. The strain on the nervous system of an aviator is tremendous and unprecedented, and when *terra firma* is finally attained the reaction abolishes self control and leads to the manifestations with which the papers have familiarized us, that are sad or funny according to the point of view. The strain imposed by acting or singing for some three hours at a stretch is similar, although less severe, and the squabbles of singers and players have entertained generations of lookers on. These outbreaks, usually attributed to a so called artistic temperament, are merely reactionary in their nature and occur in lumberjacks and hodcarriers, who, being deficient in the power of expression, attempt to muffle the pealing of their jangled nerves with whiskey, only too often with the result of increasing the discord.

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In the general chorus of lamentation over the damage done to business by the motor car, it is not unpleasing to catch the voice of the patent medicine manufacturer. Nothing in bottles can produce the euphoria conferred by a swift ride in the open air. The machine, however, is growing a new crop of patients for the physician, large, florid, and inactive persons complaining of constipation, hæmorrhoids, and the first warning twinges of gout. The motor car sharpens the appetite without in the least helping elimination. The pleasure of motoring, therefore, is heavily alloyed like all other mundane pleasures. Perhaps the next invention will be a vehicle capable of running from hole to hole on the links, thus rendering futile the last hygienic refuge of the man of leisure.

* * *

In The Scaler, one of the *Stories of the Blazed Trail, by* Stewart Edward White, one Barney Mallan suffers a fracture that is absolutely unique; "with a single, powerful blow of a starting bar the Rough Red broke one of the bones of his tibia."

* * *

Whiskers are subject to the laws of evolution. In A Mediæval Baron's Household, by G. G. Coulton, in *Harper's* for November, we note a curious picture of a dinner in which the host and his guests are all smooth shaven, while the butlers wear long beards. An interesting article in this number is The Perpetual Poor, by Robert W. Bruère, which is worthy of careful attention, not only from physicians, but from all employers of men. In it is a description of Bellevue Hospital in the old days when nurses were a terror to patients and physicians alike.

* * *

In great contrast to the foregoing is The Great Modern Hospital, by Dr. W. Gilman Thompson, in the November *Century,* which describes the magnificent institutions of to-day, not only in the United States, but all over the world. In this *Century* is a fine picture of the beautiful bust of Dr. S. Weir Mitchell by William Ordway Partridge. The Advance of the Water Wagon, by Dr. Henry Smith Williams, shows how the aqueous Juggernaut is rolling irresistibly over the country while former drinkers, moderate and immoderate, precipitate themselves under its wheels with loud cries of joy. It is a new flood without the need of an ark. It is interesting to note the attitude of France toward this temperance movement, for France used to be cited as a model to drinkers. She advises her citizens now to confine their alcoholic excursions to the light wines, "less than one litre a day."

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The Animal Mind, as a study in biology, will interest medical readers of the November *Atlantic,* particularly as the article is by John Burroughs. The reminiscences of Goldwin Smith will attract all college men.

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In the November *Review of Reviews* Dr. John B. Huber discusses Infantile Paralysis—A Menace, for the benefit of lay readers. Six Years' Battle for the Working Child, by Owen R. Lovejoy, is a moving story of the struggle against soulless economic conditions. The cartoons in this magazine, selected impartially from partisans on both sides of every controversy, are very amusing and are likely to stick in the memory better than the most trenchantly written arguments.

* * *

Good Housekeeping for November has Deadly Drugs and Beverages, by Emmett Campbell Hall, who states that many so called "soft" drinks contain cocaine and tropococaine. His remark that persons addicted to opium rarely live over ten years after acquiring the habit is not justified by the facts. An editorial writer states that many families are writing to say they have abandoned the use of meat. Whether this phenomenon is due to the high price of that commodity or to other causes, there seems to be no doubt of its actuality. There are certainly cheaper ways of getting protein into the system.

* * *

The old family physician was examining a diaper near the window. He was humming absentmindedly a popular air, Every Little Movement Has a Meaning of Its Own. Finally he turned to the anxious mamma with a smile and an encouraging prognosis. The group made a charming *genre* picture.

* * *

The Coming of the Huns, in the November *Scribner's*, is the first of a series of papers called Through the Mists, a sort of historical fiction, by Sir Arthur Conan Doyle, the preparation of which must have cost the doctor many hours of deep reading and research; the articles are concerned apparently with the early history of Christianity. It is interesting to note that religion of a kind is also the subject of The Bigot, by Thomas Nelson Page. There is other good fiction in the editorial department. The Point of View is entertaining, and the illustrations are, as is usual with *Scribner's*, beautiful and artistic.

* * *

Extract from The Homely Heroine, by Edna Ferber, in the November *Everybody's*: "I have heard a real New Yorker can get bored in Paris. In New York the sky is bluer, and the grass greener, and the girls are prettier, and the steaks are thicker, and the buildings are higher, and the streets are wider, and the air is finer than the sky, or the grass, or the girls, or the steaks, or the air of any place else in the world. Ain't they?" New Yorkers will be compelled to admit that they are. In Mother and Father, by James Oppenheim, our sentimental colleague, Dr. Rast, has to treat his own baby for a convulsion. Even doctors of smaller conversational output than Rast should hand over their own sick babies to a colleague.

* * *

Physicians who think it wise to crowd their shelves with ponderous and handsome volumes, instead of reading the medical journals as they should, may ponder the words of the elder D'Israeli: "The Bibliomania, or the collecting an enormous heap of books without intelligent curiosity, has, since libraries have existed, infected weak minds, who imagine that they themselves acquire knowledge when they keep it on their shelves. Their motley libraries have been called the mad houses of the human mind; and again the tomb of books, when the possessor . . . coffins them up in the cases of his library. . . . Fortunate are those who only consider a book for the utility and pleasure they derive from its possession."

NEW PUBLICATIONS.

Stelwagon, Henry W.—Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. Sixth Edition, Thoroughly Revised. With 289 Illustrations in the Text and 34 Full Page Colored and Half Tone Plates. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 1195. (Price, $6.)

Jordan, Edwin O.—A Textbook of General Bacteriology. Fully Illustrated. Second Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 594. (Price, $3.)

Ball, James Moores.—Andreas Vesalius. The Reformer of Anatomy. St. Louis: Medical Science Press, 1910. Pp. xvii-149. (Price, $5.)

Schüle, A.—Wesen und Behandlung der Achylia gastrica. Halle a. S.: Carl Marhold, 1910. Pp. 44.

Hiss, Philip Hanson, and Zinsser, Hans.—A Textbook of Bacteriology. A Practical Treatise for Students and Practitioners of Medicine. With One Hundred and Fifty-six Illustrations in the Text, Some of Which are Colored. New York and London: D. Appleton & Co., 1910. Pp. xiv-745. (Price, $3.75.)

Senator, H.—Polyzythämie und Plethora. Berlin: August Hirschwald, 1911. Pp. vii-80.

Hecht, Adolf F.—Die Faeces des Säuglings und des Kindes. Die Bedeutung und Technik ihrer Untersuchung. Mit einem Vorwort von Hofrat Prof. Dr. Th. Escherich. Berlin und Wien: Urban & Schwarzenberg, 1910. Pp. vi-186. (Through Rebman Company, New York.)

Ehrlich, Paul, und Hata, S.—Die experimentelle Chemotherapie der Spirillosen (Syphilis, Rückfallfieber, Hühnerspirillose, Frambösie). Mit Beiträgen von H. J. Nichols, New York, J. Iverson, St. Petersburg, Bitter, Kairo, und Dreyer, Kairo. Mit 27 Textfiguren und 5 Tafeln. Berlin: Julius Springer, 1910. Pp. viii-164. (Through Rebman Company, New York.)

Hoffa, Albert.—Atlas und Grundriss der Verbandlehre für Studierende und Aerzte. Nach des Verfassers Tod bearbeitet von Privatdozent Dr. Rudolf Grashey, München. Vierte, wesentlich vermehrte Auflage, mit 170 Tafeln und 134 Textabbildungen. München: J. F. Lehmann, 1910. Pp. v-152.

The Medical Record Visiting List or Physicians' Diary for 1911. New Revised Edition. New York: William Wood & Co., 1911.

Combes, A. C.—Combes's Day Book and Ledger for Physicians. Containing a Daily Record for Six Hundred Different Families in a Year, Each Account for the Entire Year Being by Itself on One Page. Newtown, L. I.: Published by the Author, 1910. (Price, $2.)

Abt, Isaac A., and Ridlon, John.—The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School, and Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume VII. Pædiatrics, edited by Isaac A. Abt, M. D., Clinical Professor of Pædiatrics, Northwestern University Medical School, with the Collaboration of May Michael, M. D., and Orthopædic Surgery, edited by John Ridlon, A. M., M. D., Professor of Orthopædic Surgery, Rush Medical College, with the Collaboration of Charles A. Parker, M. D. Series 1910. Chicago: The Year Book Publishers, 1910. Pp. 242. (Price, $1.25.)

Columbia University Bulletin of Information. College of Physicians and Surgeons. Announcement. 1910-1911. New York: Columbia University, 1910. Pp. 88.

Thirty-third Annual Report of the Board of Health of the State of New Jersey. 1909. Pp. 526.

Transactions of the Fourth Annual Meeting of the Canadian Hospital Association, held at Montreal, March 28 and 29, 1910. Volume IV. Pp. 104.

Proceedings of the National Confederation of State Medical Examining and Licensing Boards. Twentieth Annual Convention, held in St. Louis, Mo., June 6, 1910. Pp. 161.

Mortality Statistics for 1909. Deaths, Causes of Death, Comparisons with 1908, Deaths of Infants and Young Children, Occupational Mortality. Department of Commerce and Labor, Bureau of the Census, E. Dana Durand, Director Bulletin 108. Washington: Government Printing Office, 1910. Pp. 138.

Juquelier, P., et Fillassier, A.—La Jurisprudence des tribunaux en matière de séparation de corps et de divorce et les faits d'ivresse. Communication faite au XXe Congrès des médecins aliénistes et neurologistes de France et des pays de langue française tenu à Bruxelles, du 1 au 8 août, 1910. Bruxelles: Imprimerie médicale et scientifique L. Severeyns, 1910. Pp. 12.

◆

Miscellany.

Poliomyelitis.—The *Public Health Reports* for October 28, 1910, contain the following table, which is very instructive:

CASES AND DEATHS FROM POLIOMYELITIS REPORTED, BY STATES, FOR MONTHS OF AUGUST AND SEPTEMBER, 1910:

State.	August. Cases.	August. Deaths.	September. Cases.	September. Deaths.
California	..	..	13	2
Colorado	..	..	4	..
Connecticut	36	9	71	10
District of Columbia	93	11	..	..
Florida	..	..	4	..
Illinois	15	5	..	..
Iowa	137	40	182	33
Kansas[1]	..	..	..	..
Maryland	3	10	..	..
Massachusetts	[2]118	..	[2]114	..
Michigan	7	2	10	4
North Dakota	29	1	38	1
Oklahoma	5	4	..	..
South Dakota	15	1	..	..
Virginia[3]	[4]30	..	[4]18	..
Washington	103	15	..	..

[1] 87 cases and 19 deaths reported during August and September.
[2] Approximate.
[3] January 1 to October 12, 1910, 326 cases were reported.
[4] This is a minimum number.

Ancient Anatomical Drawings from Tibet.—The military expedition which reached Lhasa in 1904 has made us acquainted with some remarkable anatomical drawings of a very early date. A set of these drawings, which were found in the Temple of Medicine at Lhasa, was deposited in the India Office Library by Lieutenant Colonel L. A. Waddell, together with some thousand volumes of rare and also of unknown treatises, including several on medicine. Waddell has given a description of the drawings in the *Asiatic Quarterly Review* for October, 1910, and a faithful copy, made by a native artist, was presented some time ago by Major H. J. Walton to the Museum of the Royal College of Surgeons of England, where it is now shown in the historical cabinet. The anatomical drawings show many points of affinity with those of early Greece. Some centuries before Alexander's invasion of India (325-27 B. C.) Rawalpindi in Northern India was famous as a place of medical learning, so that there may have been an exchange then between the medical centres of the east and west. In Waddell's opinion the anatomical charts now found in Tibet were obtained from Northern India in an early Christian century. The main chart shows three figures, the central being described as a "chart for identification of the internal parts of the body." The right hand figure, a female, is inscribed: "The method of disposition of the five deep veins for ascertaining the cause (of disease), and the superficial middle vein of the mystical circle of the breast." The left hand figure, a male, bears the legend: "Delineation of the inner vessels (showing) the mode of connection of the eight great veins of the hidden systems." The position of the blood and bile vessels in the right and left halves of the male body were supposed to be reversed in the female. The drawings cannot be said to show an accurate knowledge of anatomy. The blood and bile vessels are the parts which receive most attention. The Indian Buddhist origin of the chart is shown by a row of twelve monks bearing Indian names, represented at the top of the drawing.—(From the *Lancet*, October 15, 1910.)

◆

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending November 11, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Batangas	Sept. 11-24	292	189
Philippine Islands—Bulacan	Sept. 11-24	14	12
Philippine Islands—Cavite	Sept. 11-24	3	3
Philippine Islands—Ilocos Sur	Sept. 11-24	14	13
Philippine Islands—Manilla	Sept. 11-24	11	9
Philippine Islands—Nueva Ecija	Sept. 11-24	60	33
Philippine Islands—Pampanga	Sept. 11-27	2	2
Philippine Islands—Pangasinan	Sept. 11-24	12	6
Philippine Islands—Rizal	Sept. 11-24	29	22
Philippine Islands—Tarlac	Sept. 11-24	13	9
Cholera—Foreign.			
China—Amoy	Sept. 18-24		1
China—Hankow	Sept. 24	2	
Germany—Marienburg	Oct. 3-9	6	2
Indo-China—Saigon	Sept. 19-25	3	3
Italy—Avellino	Oct. 16-22	2	1
Italy—Avellino, province	Oct. 2-7	3	1
Italy—Bari	Oct. 16-22	12	6
Italy—Bari, Carbonara	Oct. 2-7	1	1
Italy—Campobasso	Oct. 16-22	3	1
Italy—Caserta	Oct. 2-7	17	6
Italy—Caserta	Oct. 16-22	96	97
Italy—Foggia, Cerignola	Oct. 2-7	2	2
Italy—General	Oct. 29-30	12	8
Italy—Leece	Oct. 16-22	6	3
Italy—Messina	Oct. 16-22	1	1
Italy—Molfetta	Oct. 2-7	1	1
Italy—Naples	Oct. 2-7	68	15
Italy—Naples	Oct. 16-22	70	28
Italy—Palermo	Oct. 16-22		
Italy—Palermo	Oct. 16-22	4	
Italy—Rome, Fiumicino	Oct. 2-7	1	1
Italy—Rome	Oct. 16-22	6	7
Italy—Salerno	Oct. 16-22	3	2
Italy—Terlizzi	Oct. 2-7	1	
Italy—Trapani	Oct. 16-22	2	2
Japan—Fukuoka	Oct. 4	20	
Japan—Kagawa	Oct. 4	2	
Japan—Kobe	Oct. 3-9	38	24
Japan—Kyoto	Oct. 7	82	30
Japan—Moji	Oct. 8	22	9
Japan—Nara	Oct. 4	1	
Japan—Okayama	Oct. 4	1	
Japan—Tokushima	Oct. 7	2	
Japan—Wakamatsu	Oct. 8	2	
Java—Batavia	Sept. 8-24	10	5
Persia—Kermanshah	Oct. 1-10	67	46
Russia—Akmolinsk, territory		80	38
Russia—Amur, territory		44	35
Russia—Archangel	Nov. 11-17	1	1
Russia—Astrakhan, government		60	32
Russia—Baku, government		63	37
Russia—Baku, prefecture		59	28
Russia—Batum, territory	Nov. 24-Oct. 1		Present
Russia—Batum, territory		1	1
Russia—Bessarabia, government		28	11
Russia—Black Sea, government		5	1
Russia—Chernigov, government		61	22
Russia—Courland, government		10	4
Russia—Cronstadt		17	9
Russia—Daghestan, territory		240	118
Russia—Don, territory		348	131
Russia—Don, territory	Sept. 25-Oct. 1	2	1
Russia—Elizabethpol, government		51	35
Russia—Erivan, government		138	77
Russia—Ferganah, territory		44	28
Russia—General	Nov. 11-17	9,554	4,632
Russia—Kars, territory		127	57
Russia—Kazan, government		39	21
Russia—Kertsch, government	Nov. 11-24	8	6
Russia—Kharkoff, government		35	9
Russia—Kherson, government		246	122
Russia—Kief, government		826	370
Russia—Kostroma, government	Nov. 11-24	60	21
Russia—Koutais, government		39	26

Place.	Date.	Cases.	Deaths.
Russia—Kuban, territory		217	113
Russia—Kursk, government		141	68
Russia—Livonia, government		41	30
Russia—Minsk, government		44	16
Russia—Mohilev		20	5
Russia—Mohilev	Nov. 25-Oct. 1	7	3
Russia—Moscow, government	Nov. 11-24	22	9
Russia—Nijni-Novgorod, gov'ment		61	36
Russia—Nikolaiev, prefecture		7	3
Russia—Novgorod, government		47	20
Russia—Odessa, prefecture		44	30
Russia—Olonez, government		2	1
Russia—Orel, government		27	11
Russia—Orenburg, government		575	295
Russia—Perm, government	Nov. 1-24	28	8
Russia—Podolia, government		270	122
Russia—Poltava, government		64	46
Russia—Pskov, government	Nov. 18-24	1	
Russia—Rjasan, government		87	44
Russia—Samara, government		1,448	735
Russia—Saratov, government		614	283
Russia—Semipalatinsk, territory		4	2
Russia—Simbirsk, government		395	243
Russia—Smolensk, government		95	34
Russia—Stavropol, government	Nov. 11-24	38	17
Russia—Stavropol, government			1
Russia—St. Petersburg		791	296
Russia—St. Petersburg, government		127	87
Russia—Syr-Daria, territory		63	41
Russia—Tambov, government		371	206
Russia—Tauride, government		49	32
Russia—Terek, territory		60	22
Russia—Tiflis, government		90	41
Russia—Tobolsk, government		3	1
Russia—Tomsk, government		80	34
Russia—Tourgai, territory		26	7
Russia—Trans-Baikal, territory		7	5
Russia—Tver, government		6	1
Russia—Ural, territory		55	42
Russia—Viatka, government		25	11
Russia—Vitebsk, government		104	47
Russia—Vladimir, government	Nov. 11-Oct. 1	18	14
Russia—Vologda, government		35	17
Russia—Voronesch, government		381	146
Russia—Yaroslav, government		51	25
Russia—Yekaterinoslav, gov'ment		285	160
Servia—Belgrade:	Oct. 7-22	6	1
Straits Settlements—Singapore	Sept. 11-17	3	
Tripoli—Tripoli	Oct. 3-16	12	9
Turkey in Asia—Erzeroum	Oct. 7-15	13	13
Turkey in Asia—Trezizond	Oct. 10-16	109	60
Yellow Fever—Foreign.			
Brazil—Manaos	Oct. 9-15	2	2
Brazil—Para	Oct. 9-15	11	7
Great Britain—Liverpool	Oct. 14	1	
Hawaii—Honolulu	Nov. 5	1	
Mexico—Campeche	Oct. 25	1	
Sierra Leone—Freetown	Sept. 1-31		1
Plague—Foreign.			
China—Amoy	Sept. 18-24		1
Smallpox—United States.			
Colorado—Archuleta County	Oct. 1-31	7	
Colorado—Boulder County	Oct. 1-31	1	
Colorado—Conejos County	Oct. 1-31	2	
Colorado—Denver County	Oct. 1-31	41	
Colorado—Fremont County	Oct. 1-31	1	
Colorado—Garfield County	Oct. 1-31	1	
Colorado—Huerfano County	Oct. 1-31	5	
Colorado—La Plata County	Oct. 1-31	4	
Colorado—Las Animas County	Oct. 1-31	1	
Colorado—Mesa County	Oct. 1-31	1	
Colorado—Montezuma County	Oct. 1-31	2	
Colorado—Teller County	Oct. 1-31	6	
Florida—Hillsboro County	Oct. 23-29	2	
Florida—Leon County	Oct. 23-29	1	
Florida—Osceola County	Oct. 23-20	25	
Smallpox—Foreign.			
Brazil—Para	Oct. 9-15	1	
China—Shanghai	Sept. 26-Oct. 9		4
Egypt—Cairo	Sept. 24-30	1	1
Indo-China—Saigon	Sept. 19-25	3	3
Italy—Genoa	Oct. 13-19	2	
Russia—Moscow	Oct. 2-8	7	1
Russia—St. Petersburg	Sept. 25-Oct. 1	21	3
Straits Settlements—Singapore	Oct. 11-24	18	5
Uruguay—Montevideo	Aug. 1-31	31	14
Zanzibar—Zanzibar	Sept 19-25	6	4

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending November 9, 1910:

CARRINGTON, PAUL M., Surgeon. Relieved from duty at San Diego, Cal., and directed to proceed to Port Townsend, Wash., and assume command.

CHAPIN, C. W., Assistant Surgeon. Upon being relieved by Passed Assistant Surgeon B. J. Lloyd, directed to proceed to San Francisco, Cal., and report to Surgeon Rupert Blue for duty.

CLARK, TALIAFERRO, Passed Assistant Surgeon. Relieved from duty at Philadelphia, Pa., and directed to proceed to Evansville, Ind., and assume command.

CORPUT, C. M., Passed Assistant Surgeon. Relieved from duty at Galveston, Texas, and directed to proceed to New Orleans Quarantine Station and assume command.

EARLE, B H., Passed Assistant Surgeon. Upon being relieved by Passed Assistant Surgeon R. L. Wilson, directed to proceed to Port Townsend Quarantine Station and assume command.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Leave of absence for one month and four days from September 26, 1910, amended to read twenty-six days from September 26, 1910.

GRIMM, R. M., Assistant Surgeon. Upon being relieved by Passed Assistant Surgeon Taliaferro Clark, directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for duty.

GUITERAS, C. M., Surgeon. Upon being relieved by Passed Assistant Surgeon R. H. von Ezdorf, directed to proceed to Galveston, Texas, and assume charge.

GWYN, M. K., Passed Assistant Surgeon. Detailed as recorder of the board to examine an officer of the Revenue Cutter Service.

LLOYD, B. J., Passed Assistant Surgeon. Relieved from duty at the Hygienic Laboratory, and directed to proceed to Seattle, Wash., and assume charge.

MCCOY, GEORGE W., Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Honolulu, H. T., and report to the Director of the Leprosy Investigation Station for duty.

MCINTOSH, W. P., Surgeon. Bureau order dated October 27, 1910, detailing him as chairman of the board to examine an officer of the Revenue Cutter Service, revoked.

MEAD, FRANK W., Surgeon. Upon being relieved by Surgeon J. B. Stoner, directed to proceed to Vineyard Haven, Mass., and assume command.

MOORE, DUNLOP, Passed Assistant Surgeon. Detailed as chairman of the board to examine an officer of the Revenue Cutter Service.

OAKLEY, JAMES H., Surgeon. Upon being relieved by Passed Assistant Surgeon B. H. Earle, directed to proceed to Philadelphia, Pa., and report to Surgeon W. G. Stimpson, for duty in the medical examination of arriving aliens.

STONER, JAMES B., Surgeon. Upon being relieved by Surgeon P. M. Carrington, directed to proceed to Savannah, Ga., and assume command.

THOMPSON, L. R., Assistant Surgeon. Directed to proceed to Washington, D. C., and report to the Director of the Hygienic Laboratory for temporary duty.

VON EZDORF, R. H. Passed Assistant Surgeon. Relieved from duty at New Orleans Quarantine Station and directed to proceed to Mobile Ala., and assume command.

WICKES, HENRY W., Surgeon. Relieved from duty at New Orleans, La., and directed to proceed to Cairo, Ill., and assume command.

WILSON, ROBERT L., Passed Assistant Surgeon. Upon being relieved by Surgeon Henry W. Wickes, directed to proceed to Charleston Quarantine Station and assume command.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 12, 1910:

BANISTER, JOHN M., Colonel, Medical Corps. Upon his own application is retired from active service on December 31, 1910, after more than thirty-one years' service.

BARTLETT, C. J., Captain, Medical Corps. Granted twenty-one days' leave of absence.

CHURCH, JAMES R., Major, Medical Corps. Relieved from duty at Fort Ontario, N. Y., and ordered to Fort Williams, Mo., for duty.

CRABTREE, GEORGE H., Captain, Medical Corps. Reports on forty-two days' leave of absence from Culebra, Canal Zone.

Cutliffe, William O., Lieutenant, Medical Reserve Corps. Ordered to Walter Reed General Hospital, Takoma Park, D. C., for observation and treatment.

Dougherty, James C., Lieutenant, Medical Reserve Corps. Granted two months' leave of absence.

Ford, Clyde S., Major, Medical Corps. Reported for temporary duty at Fort Yellowstone, Wyoming.

Hereford, John R., Lieutenant, Medical Reserve Corps. Granted leave of absence for one month and twenty days.

McKinney, Garfield L., Lieutenant, Medical Corps. Upon arrival in San Francisco, California, will report to the commanding officer, Army General Hospital, at that place for duty.

Miller, Edgar W., Captain, Medical Corps. Relieved from duty at Fort Williams, Mo., and ordered to Fort Ontario, N. Y., for duty

Perley, Harry O., Colonel, Medical Corps. Left Denver, Colo., on thirty days' leave of absence.

Porter, Ralph S., Captain, Medical Corps. Granted four months' leave of absence.

Shaw, Henry A., Major, Medical Corps. Granted leave of absence to include December 5, 1910.

Sherwood, J. W., Lieutenant, Medical Reserve Corps. Reported for temporary duty at Fort Andrews, Mass.

Willcox, Charles, Major, Medical Corps. Relieved from duty at Fort Totten, N. Y., and ordered to Fort Sheridan, Ill., for duty.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 12, 1910:

Baker, M. W., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, New York, N. Y.

Brooks, F. H., Passed Assistant Surgeon. Detached from the Navy Recruiting Station, Omaha, Neb., and ordered to the *Birmingham.*

Bunker, C. W. O., Assistant Surgeon. Detached from the *Montgomery* and ordered to the Naval Hospital, Mare Island, Cal.

Byrnes, J. C., Medical Inspector. Detached from command of the Naval Hospital, Newport, R. I., and ordered to command the Naval Hospital, New York, N. Y.

Camerer, C. B., Assistant Surgeon. Detached from the Naval Hospital, Las Animas, Colo., and ordered to the *California.*

Diehl, O., Medical Inspector. Ordered to command the Naval Hospital, Newport, R. I.

Dollard, H. L., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Navy Recruiting Station, Kansas, City, Mo.

Dykes, J. R., Passed Assistant Surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Eytinge, E. O. J., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the *South Dakota.*

Farenholt, A., Surgeon. Detached from the *California* and ordered to command the Naval Hospital, Puget Sound, Wash.

Garrison, H. A., Assistant Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

Gatewood, J. D., Medical Inspector. Ordered to duty as president of the naval examining and naval medical examining boards at the Naval Medical School, Washington, D. C.

Green, E. H., Medical Director. Detached from command of the Naval Hospital, New York, N. Y., and ordered to duty at the Navy Recruiting Station, New York, N. Y.

Guest, M. S., Surgeon. Detached from command of the Naval Hospital, Pensacola, Fla., and ordered to continue other duties.

Higgins, M. E., Assistant Surgeon. Ordered to the naval proving ground, Indian Head, Md.

May, H. A., Passed Assistant Surgeon. Detached from the bureau of medicine and surgery, Navy Department, and ordered to duty at the Naval Hospital, Las Animas, Colo.

Morris, L., Surgeon. Ordered to the naval medical supply depot, New York, N. Y.

Parker, E. G., Surgeon. Detached from the *South Dakota* and ordered home to await orders.

Seaman, W., Surgeon. Detached from the Navy Recruiting Station, New York, N. Y., and ordered to command the Naval Hospital, Pensacola, Fla.

Shipp, E. M., Surgeon. Detached from duty as president of the naval examining and naval medical examining boards at the Naval Medical School, Washington, D. C., and ordered to continue other duties.

Straeten, R. J., Passed Assistant Surgeon. Detached from the naval proving ground, Indian Head, Md., and ordered to the Navy Recruiting Station, Omaha, Neb.

Taylor, J. L., Passed Assistant Surgeon. Detached from the Naval Hospital, Las Animas, Colo., and ordered to duty at the Naval Hospital, Naval Home, Philadelphia, Pa.

Thompson, F. W., Assistant Surgeon. Detached from the Navy Recruiting Station, Kansas City, Mo., and ordered to the *Montgomery.*

Vickery, E. A., Passed Assistant Surgeon. Detached from the *Solace* and ordered to the *Maryland.*

Woodward, J. S., Passed Assistant Surgeon. Detached from the *Birmingham* and ordered home to await orders.

Births, Marriages, and Deaths.

Died.

Ackert.—In Poughkeepsie, New York, on Monday, November 7th, Dr. William S. Ackert, aged forty-five years.

Albee.—In Oshkosh, Wisconsin, on Tuesday, November 1st, Dr. Ernest S. Albee, aged thirty-four years.

Allen.—In Liberty, Missouri, on Friday, November 4th, Dr. John Marshall Allen aged seventy years.

Barry.—In Springfield Ohio, on Thursday, November 3d Dr. John W. Barry aged sixty-four years.

Chenoweth.—In Fern Hill, Washington, on Tuesday, November 1st, Dr. William S. Chenoweth, aged fifty-one years.

Dandridge.—In Cincinnati, Ohio, on Sunday, November 6th, Dr. N. P. Dandridge, aged sixty-four years.

De Vore.—In Smithfield, West Virginia, on Thursday, November 3d, Dr. J. N. De Vore.

Duncan.—In New Rochelle, New York, on Monday, October 31st, Dr. Robert H. Duncan.

Dunlop.—In Louisville, Kentucky, on Wednesday, November 9th, Dr. Robert Dunlop, aged fifty-six years.

Frank.—In Hoboken, New Jersey, on Sunday, November 13th, Dr. Arnold Frank, aged sixty-two years.

Gregory.—In Americus, Georgia, on Wednesday, November 2d, Dr. Francis Bartow Gregory, aged forty-nine years.

Harding.—In Medina, New York, on Monday, November 7th, Dr. Chester Harding aged sixty-two years.

Hepburn.—In Philadelphia, Pennsylvania, on Thursday, November 3d, Dr. Charles W. Hepburn, aged sixty-two years.

Lewis.—In New York, on Sunday, November 13th, Dr. Frank Newell Lewis, aged fifty-three years.

Luton.—In St. Thomas, Ontario, on Tuesday, November 1st, Dr. Leonard Luton, aged seventy-five years.

Miles.—In Yonkers, New York, on Wednesday, November 9th, Dr. Charles A. D. Miles, aged fifty-eight years.

Mingos.—In Danville, New Jersey, on Thursday, November 3d, Dr. L. M. Mingos.

Newman.—In Washington, D. C., on Friday, November 11th, Dr. Henry M. Newman, aged fifty-four years.

Searle.—In Honesdale, Pennsylvania, on Monday, October 31st, Dr. Harry B. Searle, aged thirty-four years.

Shanks.—In Albany, New York, on Saturday, November 5th, Dr. Seth G. Shanks, aged sixty-three years.

Talley.—In New Orleans, Louisiana, on Thursday, November 3d, Dr. Ulysses G. Talley, aged thirty-eight years.

Wurtz.—In Brooklyn, New York, on Tuesday, November 8th, Dr. Henry Wurtz, aged eighty-two years.

Young.—In Jackson, Michigan, on Thursday, November 3d, Dr. George C. Young, aged fifty-two years.

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Original Communications.

THE CARBON COMPOUNDS OF ARSENIC IN THE TREATMENT OF SYPHILIS.

By Scott C. Runnels, M. D.,
Indianapolis.

Once more the carbon compounds of arsenic have come to the fore in the treatment of disease, but this time the new preparations of Ehrlich and Hata (1) bid fair to establish these heretofore unaccredited vagabonds of the therapeutic family as permanent and very valuable agents. Since as yet it has been impossible in the treatment of the diseases of animal parasitic origin, such as malaria, sleeping sickness, amœbic dysentery, and syphilis, to obtain any immune sera, Ehrlich has been trying to develop some safe chemical compound more poisonous to the infection than to the person infected. In his work with the sleeping sickness his attention was called to atoxyl as an agent for the destruction of the trympanosomes (38). Working from this as a basis he has built up in his laboratory a vast number of arsenical compounds, in his search for some agent that will destroy the protoplasm of the parasite (with particular reference to that of syphilis) and leave the patient unharmed. The care and patience with which this has been done is shown by the fact that already there have been over 630 derivatives discovered and tested, only four of which have proved at all acceptable, number "418" being the first partially successful result, while none was considered worthy of trial until reaching the now famous "606." Since the experimental work has begun on the latter the research has continued and now Ehrlich announces still another compound, which he calls the "hyperideal." The attempt has been to prepare an agent that will enter into the system without harm to the person and absolutely destroy by a single dose all the spirochætæ, leaving an uninjured organism free from infection. This principle is called by Ehrlich (1) *therapia sterilisans magna,* and it appears that in "606" he has, in a large measure, been successful.

This substance is very complex in its structure. The result is that its correct name has been variously garbled in the reports, having been called everything from arsenobensol (15) to arsenophenolamin (39). Its full name is, however, as represented in German chemistry, paradiamidodioxydichlorarsenobenzol (38), familiarly known as 606. The structural formula, as it has reached this country, which does not entirely correspond with its name is NH_2 OH C_6H_3 As C_6H_3 OH NH_2 (39). However, since Ehrlich has patented his product, a very wise precaution, these facts are of only theoretical consideration.

After the discovery of the compound and its experimental demonstration on animals it was sent to a number of the more prominent clinics of Germany for trial. The announcement of its success was made by Ehrlich at the Congress of Internal Medicine at Berlin (11) since which time the large German medical weeklies have been flooded with reports of its use. As yet the remedy is not on the market, only those who are favored by the discoverer having the use of it. The consensus of opinion of all who are acquainted with its action, however, is that dioxydiamidoarsenobenzol, when properly given, will destroy the spirochætæ in from twelve to seventy-two hours, abate all the active lesions of syphilis, and render a positive Wassermann reaction negative in from four days to twelve weeks, thus making an absolute cure of syphilis without actual danger to the patient.

Wechselmann, the head of the dermatological clinic of the Virchow Krankenhaus at Berlin, who has probably had more experience with the new remedy than anyone, says (34) that after having tried it in chicken spirilloses and recurrent fever in rabbits and proved its harmlessness to the animal in doses of 0.15 gramme per kilogramme and effectually destroyed the infection, that he decided to use it on a few hopeless human cases of syphilis. Two of these being moribund before administration were examined post mortem to discover the effects of the arsenic on the organs; but since none were found he decided that dioxydiamidoarsenobenzol was harmless in reasonable doses (40). Now, reporting on its use in 600 cases (a later report brings Wechselmann's cases up to 1,200) he says that the chancres heal rapidly in from twelve to twenty-four hours, that when there was a pronounced sclerosis the absorption takes longer, but that the ulcer is clean. In four cases there appeared an exanthem which healed spontaneously. Mucous patches heal in from twenty-four to forty-eight hours, even in smokers. The roseola disappears in a few days, as do the malignant ulcers, the rupia, the warty papules, the syphilides, and gummata will also disappear. The larger papulous syphilides take longer and for them a second injection is sometimes necessary. Its effects on syphilis of the bones are very favorable, especially the night pains that disappear as by magic. Even in the most malignant cases and when there was a severe reaction pain from the injection, the night fol-

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lowing would be easier than the preceding. A case is reported of a man who found it necessary to use 3 grammes (50 grains) of morphine each night to abate the pains, that were relieved the first night after injection. This was the rule and not an exceptional case.

Despite the known ill effects of arsenic when taken in large doses, such as the obliterative neuritis and the disturbances of coordination, as are produced in the dancing mice, he has had no ill effects of great importance following the injection. The temperature is usually elevated, 101°, 103°, and in one case 105.8° F., which lasts for from twenty-four to thirty-six hours and disappears gradually. This is accompanied by an increase in blood pressure. People with weak hearts or poor circulation must, therefore, be carefully watched and even excluded from the action of the drug. Usually there is pain accompanying the injection, often it is very severe, and sometimes requires the use of morphine. This never lasts over three days. There is always quite an induration at the site of injection which persists for some time, even months after a small lump being palpable. This is to be expected, as Alt (41) has demonstrated that a large percentage of the salt stays unabsorbed at the site of injection. It produces no depleting or depressing effect analogous to that of mercury and may therefore be given to the tuberculous when other treatment is contraindicated. Patients under the effects of arsenic are not so despondent as those under mercury, for they immediately become cheerful. The tendency to suicide is entirely overcome even when they are sceptical of cure. They begin to put on weight immediately, sometimes as much as two pounds per week.

Herxheimer, the head of the clinic at Frankfort, who therefore works directly under Ehrlich's supervision, while not reporting so many cases, yet has done some very excellent work (28 and 48). In all his cases but one the spirochætæ were eliminated in forty-eight hours so as to be undiscoverable in any lesion. In that one case the spirochætæ had persisted for eleven weeks to date of report, unaffected by several injections. Gluck (54) also reports two such cases. There seem to be rare strains of protozoa, therefore, that are arsenic fast. Herxheimer, as also does Jellinek (50), warns against too great haste in accepting the new drug and insists on a most careful examination of the eye, heart, lungs, liver, and kidney before administration.

Iverson, of St. Petersburg (25), reports favorable experiences in sixty cases. He says the Wassermann reaction is invariably negative in fourteen days, but that it is more intense immediately after the injection, a very interesting point. He has had no by effects and is unable to discover the spirochætæ three days after the injection. Neisser (2) also reports a "negative phase" in the form of a local reaction of the cutaneous lesions, especially the ulcer. He says, "This leaves no doubt as to the specific character of the remedy."

Schreiber and Hoppe (12) report no bad effects, but the "scarlet fever eruption" sometimes lasts for three days. They further say that the Wassermann reaction became negative in ninety-two per cent. of the cases, this occurred in the earliest case at four days and the latest, seventy days after the injection.

Loeb (8) also reports the "intensifying reaction," as does Treupel (9), both of them reporting successes with the treatment and no contraindications.

Alt (40) says the results in nervous cases are all that could be hoped for. In recent cases of tabes there was a marked retrogression of the subjective symptoms and also an improvement of the objective. Of course tissues already destroyed cannot be reformed nor their functions restored. The results in syphilitic epilepsy are favorable.

One very interesting case is reported by Taege (26) of an infant (Ehrlich has forbidden the use of the drug under a year) which had syphilitic phemphigus. This was cured by 0.3 gramme administered to the mother. It was ascertained that the drug did not pass into the milk.

While the reports are very favorable, not to say enthusiastic, yet it should not be thought that there is not another side to the question. Bohac and Sabotka (10) report three cases of suspension of urine, one lasting for ten days, together with abolition of reflexes, rectal tenesmus, and constipation. Ehrlich in answer (13) says that the disturbances were due to a poor grade of methyl alcohol used with the injection. Bohac and Sabotka (14), however, reply that the symptom complex had no resemblance to poisoning by methyl alcohol. Pick (29) reports the reduction of the urine to 400 c.c. per diem as being common, accompanied by a loss of appetite, dryness of the throat, and an increase in the pulse rate to as high as 108. McDonagh (35) reports transitory albuminuria in one case. Franckel and Grouven (30) report a case of death due to "individual oversusceptibility" to arsenic. The patient died with "severe symptoms of arsenic poisoning" in three and a half hours. The autopsy showed extensive softening of the left temporal lobe. Distinct amounts of arsenic were recovered from the spleen, lungs, and liver, it was not stated in what form the arsenic was found. The clinic at Prague (32) reports blindness, loss of reflexes, and disturbances of coordination as results of the drug. Klingmuller (53) records a case of gangrene, and Pinkus (53) has collected three cases of local necrosis, two of abscess, one of toxic erythema, one of depressor paralysis, one of tenesmus, and a case of diabetes was severely aggravated, remaining so to date. Altogether there have been fourteen deaths in twelve thousand cases reported. Ehrlich states that if the proper precautions had been taken the most of them would have been avoided. It is possible that disturbances are due to impurities (14). However, the remedy has not yet been brought to the perfection which will allow of its administration without danger, unless the recent "hyperideal" compound proves to be one third as dangerous, as given by Ehrlich. Therefore (20) its use as yet must be confined to hospitals where patients are under constant supervision.

Hoffmann (22) states that "by effects have accompanied the remedy to such an extent as to invalidate the claim that it was entirely harmless." He also says that the remedy does not kill all the germs, as he was able to demonstrate lively spirochætæ a week after injection. However, all other reporters say that in the occasional cases in which one dose is not sufficient, usually because the dose is too small, a second injection will suffice. Hoffmann reports one death and two "disturbances of the heart," with pulse of 160 and extension of the cardiac dulness to the right, together with accentuation of the second sound. Junkermann (33) had two cases in which there was "change in the heart rhythm with sweating and anguish."

While these mishaps are a severe arraignment of any remedial measure, even one that promises such a great benefit as the eradication of syphilis, yet it must be remembered that here are gathered practically all the deleterious effects from seven thousand cases; the results of the remainder being so uniform as to make comment unnecessary.

As to the fate of the arsenic in the system Franckel and Grouven (30) report that from 6 to 10 milligrammes are eliminated in the urine daily for the first week, from 6 to 8 milligrammes the second week, after which none appeared. It was not stated in what form the arsenic appeared. The elimination was not constant, there being great individual variation. Alt (41) says that the elimination takes longer than was supposed and that the arsenic is still present in the urine from ten to twelve days after the injection. Further, that the insoluble deposit remained at the site of injection, a large percentage of it being unabsorbed. Fischer and Hoppe (5) say that the excretion is practically over at fourteen days, but that a "considerable" amount remained in the muscular tissue for a long time.

An editorial in the *Journal of the American Medical Association* (37) says that "the action of arsenic in the organic form is practically the arsenic action and depends upon the destruction of the organic radicle and the liberation of the arsenic in the blood." It must not be forgotten, however, that the results obtained with the carbon compounds of arsenic are not possible with the others. The *Journal* says further that "the compound must have an affinity (?) for the protozoon, retaining its structure until after it has entered the cell; and that this specificity depends upon the organic radicle." The fact that a certain percentage of spirochætæ are tolerant to arsenic and that therefore there may be an incomplete destruction and no cure leads to the danger of over dose. This is particularly prominent with the carbon compounds of arsenic on account of the large amounts that can be given before the arsenic action becomes apparent and on account of the difficulty of the early diagnosis of arsenic poisoning.

The work of Nichols, of the Rockefeller Institute, with "606" on animal yaws is of interest (4). He was able to demonstrate experimentally that all the spirochætæ were destroyed in twenty-four hours by a dose of 0.0045 gramme per kilogramme. McIntosh (36) says that dioxydiomidoarsenobenzol is a specific for European relapsing fever and will also be equally efficient in the other spirilloses. Fleckseder (54) reports on its use in malaria. Theoretically the remedy should apply to all the animal infections.

The modes of administration are numerous, almost every clinician is trying to attach his name to Ehrlich's by the application of his own technique (46). But the Wechselmann modification (7) seems to be the most used. This consists in dissolving the crystals of arsenic as they come from the laboratory in sodium hydroxide and precipitating with acetic acid, being very careful to make the solution exactly neutral. The crystals are then washed, and the insoluble residue injected. If the injection is exactly neutral much of the pain and discomfort of the former acid technique is eliminated. "606" as it comes from the laboratory is a very unstable salt, being broken up almost immediately by the action of air. On this account it is shipped in hermetically sealed glass vacuum capsules. These must be used as soon as broken or the complexity of the molecule will be destroyed. The salt comes as a yellow crystal.

The dose is given as a single injection and rarely has to be repeated. Although the eleven months that the remedy has been under observation is too short a time to definitely state the permanent value of the cure, the inability to demonstrate the spirochætæ and the change in the Wassermann reaction would lead to the opinion that it was an absolute obliteration of the disease. In the few cases where there have been recurrences they have been mild and easily overcome. Should it prove to be all that it appears we will have an agent unique in medicine, which at a single dose will eradicate a certain infection in all cases. Quinine, antitoxine, or any other remedy could not be compared in the point of efficiency. Whatever the final outcome the new treatment is far in advance of any means yet discovered in the fight against syphilis.

The literature in this country is as yet very limited; Nichols and Fordyce (38) and Fordyce (57) have, perhaps, the fullest articles, while that of Wechselmann (34) is decidedly worth reading. What the discovery of a sure remedy for syphilis would mean to humanity can only be imagined; but one author (32) estimates that in Austria alone the money cost to the state for the institutional care of syphilitic diseases is $6,000,000 annually, without mentioning the individual loss nor the loss to business.

Murphy (x37) says that since "this remedy will not be given to the profession for use for a number of months" we are "forced to try other preparations of arsenic." For this purpose he selected sodium cacodylate. Given in daily doses of from one to two grains hypodermically, he has obtained results only slightly less striking than the astonishing cures of the German specific. He states that "from the chancre the spirochætæ disappear completely in forty-eight hours, the induration is markedly reduced in twenty-four, and it becomes a soft clean ulcer in seventy-two hours. From that time on it repairs with the same speed as an aseptic sore of mechanical origin would heal in the same tissue." "The adenopathies except those with suppurating central foci, disappear in four or five days. The mucous patches repair in from twenty-four to forty-eight hours, the advancing ulcers of the palate and posterior wall of the pharynx clear up and heal as healthy granulating wounds in from three to six days and the perforating ulcers of the palate repair in their margins leaving the perforation in a healthy condition." Several cases are reported in detail and one photographically.

Any remedy capable of producing such results is worthy of a full investigation. In going over the literature it was surprising to find how little there was on the subject of the cacodylates. While the substance has been known since its discovery by Bunsen in 1837, there has been very little work done on it from a chemical standpoint, and while medically it has wandered through the ailments man is heir to, its use in any particular condition has not become sufficiently established to call forth a thorough investigation.

Its chief use has been in anæmia, and it is apparently given indiscriminately for all types. Gautier (x6), whose advocacy of sodium cacodylate ten years ago spread its application to some extent, recommended its use in skin diseases, in the place of the existing arsenical compounds, most of which are badly tolerated by a large percentage of persons. The results, however, were not all that were anticipated, although Martindale (x12) says its use was attended with some considerable success. Gautier has since (x12) detected arsenic in the thyreoid gland and concluded that its presence was essential to the animal economy, from which he argues that arsenic should have a larger field in medicine. D'Emilio (x41) advises its use in malaria. Hassian and Hershfeld (x36) have used it favorably in chorea. Widal (x9) uses it in tuberculosis, in which it has been favorably used in this country, and Murphy (x37) relies on it to relieve the pain of metastatic osseous carcinomata, also stating that there were "striking effects in the rapid dissolution of the deposits of fibrinous pericarditis in children." The use of cacodylates (x42) causes "great increase in the erethrocytes and polynuclear leucocytes." Dawes and Jackson find the percentage of hæmoglobin and the number of red blood cells increased in thirty-four out of forty-five cases of anæmia. Wilson (x31) reports favorable use in remittent fever, and Dominico (x18) says that it is the best agent we have in malaria, which last is supported by Martindale (x12). The use of the cacodylates is also recommended (x32) in influenza and the vomiting of pregnancy as well as (x12) diabetes and cancer.

Fraser (x16), on the other hand, alleges that the cacodylates are entirely inert. Giving it in two cases in doses as high as six grains per diem for over forty days he reported "not only no therapeutic effect but no toxic action." The amount of arsenic given was enough in each case to kill forty men; the daily dose at the height of the experiment contained enough arsenic to be fatal to two men if given as the oxide. He made no examination of the blood, however, to see if any change had been wrought. He says "the arsenic had become emasculated and inert, probably because in the inert compound the arsenic had formed so stable a union with the other ingredients that no dissociating influences to which it was subjected in the body was able to set free the active arsenic from the combination." He is supported in this contention by an editorial in the *Journal of the American Medical Association* as late as July of this year, which says (x35), "There is little evidence that organic arsenic will accomplish more than can be done with the older forms."

However, Fraser's results are only negative, in the first place proving that the cacodylates if pure are safe; but in the second place he does not prove that if the drug were to meet some unusual and extraneous body, such as the malarial plasmodium or the *Spirochæta pallida*, that there would be no dissociation of the organic radicle. This in fact is the type of substance for which Ehrlich instituted his search, a substance which would enter the body without harm to the individual, but which would act on the invader.

However, all the unfavorable reports are not summed up in Fraser's assertion of impotency. Gautier (x7) says if the cacodylates be given by mouth various forms of intolerance arise, feeling of weight in the stomach, cramp in the epigastrium, intestinal disorders, fœtid breath, and the odor of garlic from the whole body. The author, to prove this, took a small dose, 0.015 grammes, within ten minutes the breath was loaded with the garlic odor and remained so for twelve hours, the feeling of weight was present in the epigastrium, but none of the other disturbances appeared, owing probably to the small size of the dose. Thinking that this might be due to the action of the gastric juice a solution of the cacodylate in the presence of sugar as a reducing agent was acted on by hydrochloric acid. No reaction was manifest either in a cold or a warm solution.

Slight albuminuria has been observed even in healthy persons after long administration (x7), which is more pronounced in those whose kidneys are not normal. Cases of paralysis and one of severe gastroenteric disturbance are reported from the use of the drug (x10). Imbert and Bodel (x8) found that 0.2 gramme reduced the volume of urine for three or four days.

Marshall and Green (x2) made a most thorough study of the physiological action of the cacodylates, but since their work was published in a chemical journal it seems to have entirely escaped the notice of physicians. They found that the commercial salt was very likely to be impure. With absolutely pure chemicals they injected animals with amounts up to 7 grammes (115 grains). Disturbances of coordination and digestion resulted, from which all but one of the five dogs recovered. Autopsies showed inflammation of the stomach, intestines and lungs, spleen enlarged, and kidneys congested. With the commercial salt, which they found to contain arsenious oxide their animals died from doses of 0.5 gramme, one fourteenth the size of the fatal dose of the pure salt.

This calls attention to what seems to be the important point in cacodylic administration, the necessity for purity. Gautier (x7) also mentions, from a theoretical standpoint, that the drug should be pure.

The chemistry of the cacodylates is very interesting. The discovery of cacodyl by Bunsen (x43) in 1837 was the second instance of the isolation of a compound radicle, cyanogen being the first. The original substance dimethyl arsenide, more correctly diarsenic tetramethyl, $As_2(CH_3)_4$, or cacodyl, is a heavy yellow fuming liquid with a characteristic alliaceous odor and very poisonous. Cacodyl oxide, $As(CH_3)_2 : O(CH_3)_2As$, is a white crystalline substance, also with an alliaceous odor and very poisonous. It is formed by the action of Potassium acetate on Arsenous oxide and is easily reduced to cacodyl, when it gives off the characteristic yellow fumes. Cacodylic acid, $OAs(CH_3)_2OH$, made by the action of mercuric oxide on cacodyl oxide, is a white crystalline substance without odor and with only a slight acid taste.

The acid when exactly neutralized with sodium hydroxide yields sodium cacodylate, $OAs(CH_3)_2ONa$, or sodium dimethyl arsenate, Molecular weight, 160. It contains 46.8 per cent. arsenic equivalent to 61.8 per cent. arsenous oxide, As_2O_3 (x12). It crystallizes as white rhombic prisms, gives off no odor and has only a slight taste. The salt is very deliquescent and contains variable quantities of water of crystallization, according to the temperature at which crystallization took place, the commercial salt usually two or three molecules. It is easily soluble in water and in alcohol. The commercial salt is very liable to contain impurities. The most dangerous are cacodyl and arsenous and arsenic oxides. Oxalates, chlorides, sulphates, and carbonates may also be present which would render the sample unfit for medical use. Therefore tests should be instituted on every sample purchased before administration.

Silver nitrate, $AgNO_3$, gives a white precipitate in the presence of chlorides, this is soluble in cold ammonia, NH_4OH; a chocolate colored precipitate indicates the presence of arsenic pentoxide, As_2O_5; while a yellow precipitate indicates arsenic trioxide, As_2O_3, (x44).

Barium hydrate, $Ba(OH)_2$, gives a white precipitate in the presence of sulphates or oxalates.

Calcium hydrate, $Ca(OH)_2$, gives a white precipitate in the presence of carbonates.

Ammonium molybdate, $(NH_4)_2MoO_4$, in large excess, gives a yellow precipitate at boiling temperature in the presence of arsenic pentoxide, As_2O_5 in solution arsenic acid H_3AsO_4 (x44).

A weak solution of iodine (either in potassium iodide or alcohol) in the presence of acid sodium carbonate ($NaHCO_3$). is rendered colorless by the action of arsenic trioxide (As_2O_3), (in solution arsenous acid H_3AsO_3) (x44).

In making test for the recognition of the cacodylates it is of utmost importance to bear in mind the fact that cacodyl and cacodyl oxide give off poisonous fumes. No reaction in which the production of either is possible should be attempted, except under the hood; for it will be remembered that Marsh, the chemist famous for his knowledge of arsenic and for whom the arsenic test is named, lost his life by the poisonous fumes therefrom in his laboratory.

Kahlbaum gives the following tests for the cacodylates (x2): Hydrogen sulphide, H_2S, passed through the solution will bring down the cacodylates as a white flocculent precipitate, which is not dissipated on boiling. This test is not always determinative, however, as the reaction may be masked by the precipitates of the metals of the second group, or by a white precipitate of sulphur from the H_2S.

The cacodylates if warmed with phosphoric acid, PH_3O_4, produce a strong odor of cacodyl. *Reaction dangerous.*

Cacodylic acid will give white needle shaped crystalline precipitate with mercuric chloride, $HgCl_2$, which is not dissipated on boiling.

The cacodylates boiled with stannous chloride, $SnCl_2$, will give off the odor of cacodyl. *Reaction dangerous.*

The melting point of sodium cacodylate is given (x27) as being in the neighborhood of 60° C. On testing a sample as it was taken from the original container, however, it was found by a half dozen determinations to average 55.5° C. The salt was so deliquescent, however, that accuracy was impossible. After eighteen hours under the vacuum pump several determinations gave no melting point. At about 250° C. the salt began to decompose, giving off the odor of acetylene, charring and forming the arsenic mirror on the sides of the tube. The melting point is therefore dependent upon the hydroscopic moisture and varies with the amount.

Imbert and Astruc (x5) have arranged a very ingenious scheme for testing the strength of sodium cacodylate. A N/10 solution of sodium cacodylate is prepared by dissolving 1.6 gramme in 100 c.c. of water. Of this 10 c.c. are neutralized with N/10 NaOH, with phenolphthalein as an indicator. A few drops of methyl orange are then added to this solution and the whole is titrated with N/10 HCl till neutral. The number of cubic centimetres of NaOH used indicates the percentage of cacodylic acid and is subtracted from the number of cubic centimetres of HCl, the remaining cubic centimetres multiplied by ten gives the percentage of pure anhydrous sodium cacodylate in the sample. This test is only to be used when it is known that other acids are absent, if the percentage of cacodylic acid is required.

If it is impossible to obtain samples of sufficient purity the following methods may be applied to the impure salt to render it fit for use.

Marshall and Green (x2) say that should the impurity be due to arsenous oxide As_2O_3, dissolve the sample in cold alcohol and filter off the arsenic which will be found as fine octahedral crystals. Evaporate the filtrate at a low temperature and repeat the process until none of the characteristic octahedral crystals are discoverable microscopically in the residue.

This process could also be applied to arsenic oxide, As_2O_5, but with greater difficulty, as this substance is quite soluble. It crystallizes slowly in large laminated rhomboidal prisms which melt at 100° C. (x45).

All impurities of an arsenical character can of course be eliminated by completing the reactions of manufacture. If the oxides of arsenic are present, the sample may be heated with potassium acetate (*reaction dangerous*), in which case cacodyl oxide is formed. This upon heating with mercuric oxide, HgO, yields cacodylic acid, which on neutralization with sodium hydroxide, NaOH, becomes pure sodium cacodylate. Cacodylic oxide or acid in the original sample can also be handled in this way. However, if this process be contemplated, it might be better to manufacture the salt from the original pure chemicals rather than attempting to work with an impure cacodylate.

The following procedure is suggested as liable to prove the most simple means of eradicating the oxides of arsenic. Add silver nitrate, $AgNO_3$, to the solution in excess, this brings down the oxides as a heavy precipitate, which is then filtered off, preferably by repeated filtration through a Gooch filter. The total absence of precipitate may be determined by the use of the nephelometer. When the filtrate is clear the excess of silver is precipitated by hydrochloric acid, added drop by drop. If at the conclusion the solution be acid it is neutralized with sodium carbonate, Na_2CO_3.

Sodium cacodylate is not a very stable salt; on account of its deliquescent properties it is readily changed by the action of the air. Diehl (x14) reports that a pure sample left in a corked bottle for eighteen months gave off an alliaceous odor. Dawes and Jackson (x33) report that a sterile solution developed fungi after a short time and on boiling gave off an alliaceous odor. The author made up solutions containing .03 gm. per c.c., each hermetically sealed in a glass tube, the tubes also contained about a c.c. of air. A week later the capsules contained a fine granular deposit, gave off the odor of cacodyl and on culture proved to be contaminated, organism not determined. Therefore solutions must be made up fresh and any sample kept for any length of time retested for purity.

Two samples of sodium cacodylate were obtained on the market, products of the two best known chemical houses of the country. They were of very different general appearance, No. 1 being fine regular crystals, No. 2 being of uneven consistency with larger crystals. No. 1 responded to all the tests for purity, except for a small white precipitate with silver nitrate, indicating the presence of chlorides. No. 2 showed a heavy deposit with silver nitrate, indicating large amounts of chlorides and gave a faint yellow color with ammonium molybdate, arsenic pentoxide. No. 1 being the purer sample was tested by the method of Imbert and Astruc and gave 1.5 per cent. cacodylic acid and 20.91 per cent. other impurity, indicating a sodium cacodylate content of the sample of 77.59 per cent. In view of the purity evidenced through the various chemical tests the 20.91 per cent. impurity undoubtedly consists almost solely of water. This figure would correspond with between two and three molecules of water of crystallization, but as the salt is so deliquescent this amount can only be an approximation. We must, therefore, conclude that the salt employed for the titration was in unstable equilibrium as regards its water content and represented no definite crystalline structure.

(*To be concluded.*)

THE CHEMISTRY OF CANCER.*

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Until five years ago the chemist was very little concerned in the scientific discussions regarding cancer. Since that time, however, many chemical researches have been published dealing with such questions as the metabolism of cancer patients, the nature and properties of a possible cancer toxine or specific cancer poison, the nature and cause of cancer cachexia, the properties of the ferments in cancer tissue, and various studies dealing with the chemical characteristics of cancer tissue as compared with normal tissue. These studies have appeared during a period when our knowledge of physiological chemistry has been increasing rapidly, and they have formed a part of this advance, but their chief value lies in the fact that they have served to demonstrate the difficulties of the subject and to define more sharply our limitations. Most of the chemical studies which have appeared have been inconclusive and fragmentary in character. It will be convenient to discuss the various points in the order given above.

CANCER METABOLISM.

Many studies regarding minor points in cancer metabolism, such as the increased excretion of phenol and indican in the urine, the retention or elimination of sodium chloride, the excretion of acetone, the nitrogen balance, the relation of ammonia excretion to a possible acidosis, and kindred points have been topics for discussion. There has been no characteristic cancer metabolism determined, but this may be due to the incomplete character of the work. The methods of metabolism study have been wonderfully improved in the last five years, and in this period there have been no complete metabolism studies extending over a necessary period of time, on a constant diet and under suitable conditions to determine the smaller differences which may distinguish the nutritive processes of an individual harboring a malignant growth. We do not know the best form of diet to prevent nitrogen loss during the period of cachexia, nor whether the rapid growth of a tumor is at the expense of the healthy tissue. From Cramer's work upon the growth of rat tumors it appears that the new growth obtains its nitrogenous material by a sparing action on the protein metabolism. The tumor cells do not appear to grow at the expense of the tissue of the host nor do they appear to have higher affinity for nutritive material than normal cells. We need to know how far these results apply to human tumors. It is questionable whether reliable conclusions in respect to these points can be drawn from experiments on such small animals where the important questions of diet and clinical condition can be so poorly determined. Clinical observations point to the fact that in the later stages of growth in the human tumor the tumor tissue may be increasing rapidly in size at a time when the normal tissues are decreasing in size. It seems probable that nutritive relations and consequently the character of the metabolism may show variations at different periods of the tumor growth. Diet, apparently, plays an important part in the immunity of rats and mice to experimental tumors, and it should be determined experimentally what proportions and forms of proteid, carbohydrate, and fat favor or inhibit the development of these growths. Lewin has found that demineralization is a constant accompaniment of cachexia in cancer as it is in cachexia from other causes, but since we know that in cancer the cachectic condition is often one of rapid growth for the tumor tissue, it would seem probable that the demineralization in cancer may be of a distinctive type. Thus far, however, no phase of metabolism has been described in cancer which does not have a counterpart in noncancerous conditions.

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Various investigators, but especially Roger and Nicol Girard Mangin, have described specific cancer poisons which cause death in small doses when injected intravenously, but which are much less toxic when given subcutaneously or intraperitoneally. These results have not been confirmed in their entirety by other observers. There is no question that saline extracts of sterile tumors may cause severe symptoms or death when given intravenously, but so will similar extracts from normal organs. The symptoms described, such as paralysis of the extremities, multiple thromboses, dyspnœa followed by cardiac and respiratory failure, may be caused by inoculating intravenously a solution of nucleoproteid from any normal organ. The saline extract from a cellular tumor contains a large proportion of this proteid,, and is extremely toxic, while a similar extract prepared from a scirrhus or fibrous growth contains very little of this proteid and is correspondingly nontoxic.

It is necessary to exercise great care in studies of this sort to be certain that the tumor material is not infected. Nevertheless, from observations extended over a period of some years I am convinced that extracts from sterile tumors given either subcutaneously, intravenously, or intraperitoneally are measurably more toxic per unit of nitrogen than extracts from fresh unautolized organs, but such results do not argue for a specific cancer toxine having a nature similar to the bacterial toxines. The metabolism studies which have been made do not materially add to the clinical observations in regard to the cause of cancer cachexia. Cachexia is not an invariable accompaniment of the tumor, and when it does occur it is found most often in those cases in which the nutritive processes are in some way interfered with or there is an ulcerating, infected, bleeding, painful tumor. Under such circumstances, cachexia develops as it would in case of empyema. I am of the opinion that we have not yet sufficient evidence to ascribe tumor cachexia in any measure to the proteolytic ferment absorbed from the tumor.

Buxton first introduced the study of cancer ferments and by the methods which he employed, was unable to discover any difference either qualitatively or quantitatively from normal tissue. In recent years the study of cancer ferments has been facilitated by new quantitative methods and two important questions may now be said to arise as a consequence of this study:

1. Are there characteristic ferments which serve to distinguish cancer from normal tissues?
2. Is cancerous tissue characterized by enzymes having marked heterolytic activity?

The work of Abdehalden and his pupils, published within the last two years, would seem to indicate that certain of the polypeptids may be split in a different manner by extracts from tumor tissue and normal tissues. They maintain that extracts of liver from normal mice cleave sleucylglycin and glycyl-l-tyrrosin slowly, while extracts from tumors act much more quickly. Also they found a heterolytic activity in comparing extracts of mouse and human tumors with normal tissues upon salanylglycylglycin in that the normal tissue split the d-alanin from the glycylglycin. Extracts of tumors cleaved the tripeptid so that clycocoll and Salanylglycin were formed. This difference in enzyme activity was not present in all tumors, but always in certain tumors. In such studies as these, we are confronted by many difficulties which arise in comparing normal with tumor tissue. The normal tissue may be obtained in fresh, healthy, sterile condition, while a tumor of any size always contains some autolytic products, and the varying content of normal blood serum and leucocytes may in part account for some of the peculiarities in ferment activity. In addition there must be continually borne in mind the ever present danger of infection.

The evidence in respect to the presence of proteolytic ferments in tumor tissue having heterolytic activity is conflicting. There is no question as to the presence of autolytic enzymes, and from the work of Petry, Wolff, and others it would appear that their activity is decidedly more marked than those found in normal tissues. Since the original experiments of Jacoby, it has been believed that the autolytic enzymes have a high degree of specificity, that is, they are capable of attacking only that special type of proteid which is formed in the same organ as the enzyme. In distinction to these, the heterolytic enzymes believed by Blumenthal and his coworkers to occur in cancer may attack other organ proteids and thus be a possible factor of great significance in the development of cancer cachexia, and may help to explain the malignant, infiltrating possibilities of tumor cells. Blumenthal and Wolff have found that when measured amounts of cancer tissue and organ tissue are autolyzed separately in one series, and conjointly in another that the autolysis is always larger in the conjoined series. They interpret these results as meaning that the enzymes of the cancer have attacked the normal organ tissue. There is no satisfactory reason for not giving the exactly opposite interpretation and concluding that the tumor has been attacked by enzymes from the normal organ. In support of their contention they point out that normal tissues from carcinomatous patients autolyze more rapidly than the same tissues from other sources, perhaps because of a storage of heterolytic enzymes, and a finding somewhat similar reported by Baer and Ettinger, who profess to have demonstrated a proteolytic activity of carcinomatous exudates in contrast to that shown by ascitic fluid produced from other causes.

Attempts were made by Kepinow and Hess and Saxl to verify these conclusions. The results were negative. From their investigations which, apparently, have been made with as much care as those of Blumenthal and his coworkers it would appear, first, that cancer tissue does not autolyze more rapidly than normal tissue equally cellular. Second, the combined autolysis of tumor tissue and normal tissue or of two varieties of normal tissue is always less than the autolyses of the two components acting separately. Tumor tissue acts like normal tissue in this respect.

From digestion experiments upon gelatin in which the proteolytic effect of the enzyme was measured with the help of the viscosimeter, Weil, working in my laboratory, has found that all tissues have some degree of proteolytic activity but that this is with a cellular tumor quantitatively greater than with normal tissue. He is not prepared to say that this excessive proteolytic activity of the tumor may not be due to leucocytic infiltration, and apparently Blumenthal has some doubts about the same point. Blumenthal, Jacoby, and Neuberg replied to the criticisms by new experiments confirming their original conclusions. Even if we grant that under the experimental conditions a heterolytic activity may be demonstrated, we cannot reason that this is the origin of, or that it is a potent factor in tumor cachexia or tumor infiltration for in the body the cells are living and are bathed continuously with blood, circumstances which alter entirely the possibilities of proteolytic activity. In this series of experiments we are again confronted with the difficulty of getting tumor material in uniform conditions for a just comparison, but from the evidence available it does not seem possible to conclude that heterolytic ferment activity is a distinguishing characteristic of tumor tissue.

Many attempts have been made to show specific chemical characters in tumor tissues. The first of these made by Petry, and repeated by Wolff and the writer, show that proteid material in tumor extracts has a somewhat different distribution than in normal tissues in that it has a higher content of nucleoproteid, a lessened quantity of globulin and albumin and more uncoagulable proteid than is found in healthy tissue. Other facts, such as the resistance to digestion by pepsin and susceptibility to digestion by trypsin, the high content in glutaminic acid and in alanin, phenyl alanin and asparginic acids, the high content in diamino acid, have been used as evidence to prove that tumor proteid has a specific character. There are two methods by which differences in character of the proteids may be determined: viz., either by an ultimate analysis or by biological reactions. By means of antiserum developed against the pure nucleoproteids obtained from a variety of tumors I have been able to distinguish sharply by means of precipitation and agglutination reactions between tumor proteids and those from the normal organs. For instance, perfectly definite reactions serve to distinguish the proteid of a lymphosarcoma from that obtained from the liver, spleen, pancreas, or thyreoid, but I could not by this means distinguish the proteid of the lymphosarcoma from that obtained from the spleen in a case of lymphatic leuchæmia. In order to make a complete separation of the amino acids obtained on complete hydrolysis of tumor tissue by the Fisher esterification method, a large amount, not less than a kilogram of pure tumor proteid is required. Thus far no such complete hydrolyses have been made, and the portion of the work which has thus far been reported lacks confirmation.

We are not certain that tumor proteid always retains its essential characteristics. Some years ago I published results showing that in certain primary sarcoma and carcinoma, nucleohistone was not present while it was invariably present in large quantity in the metastases in the lymph nodes. From these results it would appear that the character of the proteid in a tumor may change somewhat with its environment without a corresponding change in the histological appearance.

With regard to the inorganic constituents, we know that rapidly growing tumors are relatively rich in potassium and sodium and poor in calcium, while the slow growing or partially necrotic tumors are rich in calcium and poor in sodium and potassium. We have no reason to suppose, however, that this is a condition which sharply differentiates tumor growth from other normal rapidly growing cells.

The chemical study of tumors is in its infancy. We have scarcely proceeded far enough to know where the chemical problems are nor have the methods now available been perfected to such an extent as to enable decisive experiments to be made. There is no reason for discouragement, however. It is scarcely to be expected that in the limits of the brief period since the first chemical investigations of cancer were made that anything approaching a solution of a problem which has so long baffled the pathologists could be reached.

414 East Twenty-sixth Street.

SUPPLEMENTARY REPORT ON THE HOT AIR TREATMENT OF PHAGEDENIC CHANCROID AND CHANCRE.*

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It is with considerable satisfaction that I am able to report a second series of four cases which confirm in every particular the beneficial action of the hot air treatment of phagedenic ulcers, and I regard it as fortunate as well as remarkable that in so short a time (about three years) I should meet with seven such cases, especially as, up to that time, in both hospital and private practice I had seen but one or two.

Case I. F. D. L., thirty-three years of age; heredity and general health good. Had gonorrhœa at eighteen and again at twenty-five years of age. Four years ago, without extramarital coitus, had symptoms of acute gonorrhœa which the attending physician attributed to strictures. These were dilated. Six months ago, a few days after coitus, a small sore appeared beneath the foreskin. This continued for several months, enlarging gradually in spite of treatment and, later, several others appeared. Two of these ulcers healed forming depressed scars. His last physician, who had treated him two months, slit up the foreskin. Three weeks ago the ulcers seemed at the point of healing, when, suddenly, they took on fresh activity and, extending to the apex of the glans, began to destroy that organ.

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*Read before the American Association of Genitourinary Surgeons, May, 1910.

Status præsens, November 23, 1909. Near the base of the glans penis, on the right side, were two deep ulcers, about as large as small peas, exuding considerable pus. Occupying the whole extremity of the glans was an ulcer, about three quarters inch in diameter, which had eaten away over one eighth inch of the urethra. The present meatus was contracted and practically invisible in the deeply ulcerated and uneven surface. Urination was difficult and quite painful. The glands in the groin were moderately enlarged, but no other adenopathy was present nor had the patient had any eruption, mucous patches, sore throat, or loss of hair.

I cauterized the two small ulcers with carbolic and nitric acid, leaving the ulcer at the apex untreated to avoid the danger of contracting the meatus. The hot air treatment was begun the same day but he was unable to exceed 120° F. temperature, the ventilating aperture having been occluded by the bedclothing. This being remedied, the patient, being something of a salamander, maintained the temperature at 170° F. for about fourteen hours each day without discomfort. On November 25th, there was a decided improvement, the ulcers being partially sealed over by the film described in my former paper (*New York Medical Journal,* January 22, 1910) and the pus being much less abundant.

November 29th. The two smaller ulcers were sealed over entirely and the greater part of the large ulcer. The latter was then cauterized with bromine, which I have found to be a valuable adjuvant in these cases, as it acts no deeper than the diseased tissues and seems to aid somewhat in the obstinate areas.

November 30th. The whole surface of the ulcers was sealed over: A little seropurulent matter exuded from the largest.

December 2nd. After washing the glans, I found that nearly the whole of the ulcerated surfaces was, apparently, healing.

December 4th. The whole of the large ulcer presented a healthy granulating appearance and the lips of a newly formed meatus about five sixteenths inch in length, were visible; urination painless and comparatively free. The two small ulcers practically healed.

December 9th. One ulcer at the base of the glans permanently healed, the other only one sixteenth inch in diameter. At this time the patient, who was a "boss painter" by trade, became restive, as his men did not get along well without his personal supervision and began to be irregular with his treatment, using the oven only from three to five hours a day. This neglect, together with the irritation caused by his walking and working seemed to light up the infection anew in the large ulcer, although the urethra was not again invaded. From this time the progress was much less rapid and occasional cauterization with bromine was necessary. Granulations, sometimes too exuberant, necessitating the application of zinc chloride solution, filled up the area which had been destroyed, until, at the date of ultimate healing, January 4, 1910. nearly the normal outline of the glans had been regained. Urination was somewhat slow, owing to the rigidity of the lips of the newly formed meatus.

On January 13th, the patient appeared with all the symptoms, including numerous gonococci, of an acute gonorrhœa. He absolutely denied coitus and said that the discharge had appeared two days after the ulcer had healed. He had at this date a large, boggy prostate, full of pus and gonococci, so that it is possible that a latent gonorrhœal prostatitis existed. He was apparently cured in eighteen days and passed the beer and nitrate of silver tests successfully, although when last seen, about three months ago, his prostate still contained considerable pus.

Case II. G. W., forty-five years old; heredity and general health good. Had had several gonorrhœas. Acquired syphilis fifteen years ago and was treated by Dr. F. W. Zimmer, of this city. Had primary lesion, enlarged glands, roseola, and a large number of mucous patches. Coitus, December 3, 1909. A few days later a small sore developed beside the frenum which a prominent surgeon of New York city assured him amounted to nothing. It soon proved to be a chancroid, which constantly spread in spite of treatment, which consisted of daily cauterization with carbolic acid and the removal of sloughs as they appeared. The patient's nervous system was pretty well wrecked, the pain caused by this treatment and by the lesion itself being almost incessant.

Status præsens, January 12, 1910. The chancroid had destroyed the frenum and dissected the skin from the pars pendula for about three quarters inch downward from the lower margin of the glans, forming an irregularly oval ulcer about one and one quarter by one inch in size, occupying the inferior surface of the penis and the apposed inner surface of the prepuce and skin. The angle between these two areas was exquisitely painful, especially at the lateral extremities. The whole area was bathed with pus. No adenopathy was present.

The oven was applied at five p. m. and the same night the edges of the ulcer began to seal over, as described in my previous article. The next morning I found that the problem of exposing the whole ulcer to the heat was a difficult one. The patient had a pendulous belly and, as is usual with fat men, a very short penis, so that it was impossible to keep the prepuce retracted. This was overcome by shaving the pubes and attaching thereto a wide strip of surgeon's plaster, perforated in two places so that a string could be passed through and tied, forming a loop. A narrow strip of adhesive plaster was then applied, encircling the glans, and enclosing another loop of string on the dorsum. A third string was passed through these two loops and tied, drawing the penis upward upon the belly and the weight of the oven upon this string kept the penis lying upon the dorsum.

At 6:30 p. m. one half of the lesion was sealed over, the exudation of pus was much less and the pain had practically ceased. The following day there was little change, but a day later parts of the ulcer took on a healthy granulating appearance. By this time subjective pain had entirely ceased and the lesion was very much less tender on pressure. It was found, however, that the ulceration had extended slightly at the two extremities of the fold between the two parts of the lesion, forming pockets, and the secretion therein contained interfered with the action of the heat. The overlying skin was incised and a better exposure obtained. These pockets were then touched with bromine.

A little later I began applying pledgets of cotton between the two surfaces at night, wet with 1 to 500 sublimate solution, instead of 1 to 2,000 and the change seemed beneficial. The area of healthy granulation tissue increased until, twelve or thirteen days after the beginning of treatment, the whole ulcer looked so favorable that I began to leave the two surfaces in contact at the bottom of the fold, in the hope that they would heal together and thus cause less deformity. This hope was realized, and the patient returned to New York on January 30th, the hot air treatment being suspended after eighteen days' use.

Dr. Swinburne, to whom I referred the case, subsequently informed me that he had little to do except to watch the lesion heal, which process was complete on February 8th.

On January 22nd, the patient called my attention to several papules on his face but, as he said he had always been subject to "pimples" occasionally, I paid no attention to them until three days later when I saw that they were characteristic syphilitic papules and that others were present upon the body. The inunction treatment with mercurial ointment was at once instituted.

This is one of the few well authenticated cases of a second infection with syphilis which I have seen recorded. Dr. Swinburne confirmed my diagnosis and noted the fact that in such cases, there is little or no glandular enlargement. This case must be regarded as one of mixed infection since the ulcer appeared only four or five days after the only extramarital coitus for some months and therefore was originally chancroidal.

The apposed surfaces healed together nearly to their original location, leaving a very slight deformity. This patient had a slight rise of temperature during the first two weeks of treatment, similar to Case II of my previous paper.

Case III. S. F. A., March 10, 1910. The patient, a commercial traveler, twenty-eight years old, was of good heredity and general health. Had had gonorrhœa several times, the last ending about three weeks ago. Coitus nine days ago, there being on the pars pendula at the time two vesicles, apparently herpes progenitalis. Two days later these became inflamed, discharged pus, and began to spread. A physician at Utica, N. Y., treated him with calomel ointment till the day before he consulted me.

Status præsens, March 10, 1910. The pars pendula presented two oval ulcers, the larger, on the dorsum, measuring one and one quarter inches in its long diameter, the smaller, near the raphe about five eighths inch. In the sulcus, on the dorsum, were three small ulcers, each about one eighth inch in diameter and the same distance apart, forming a triangle. All of these lesions were examined for spirochætæ, by the darkfield method, with negative results. Inguinal glands moderately enlarged.

I cauterized all these ulcers with carbolic and nitric acid, and advised the constant use of pledgets of cotton wet with 1 in 500 sublimate solution. On the patient's return, two days later, the ulcers showed no improvement and had extended slightly. The four hospitals being full, I sent him to a private institution and commenced the use of the hot air treatment on the evening of March 12th. A sleeve of asbestos paper was applied about the base of the penis to keep it erect. It was impossible to expose the ulcers beneath the foreskin and consequently they were dressed with cotton pledgets moistened with 1 in 500 sublimate solution, renewed several times a day. The day following there was some improvement in the larger lesions, and on the 14th they were decidedly smaller and not painful. The ulcers beneath the prepuce, however, had run together and were causing considerable pain. I then shaved the pubes and applied a strip of surgeon's plaster, extending upon the pars pendula, so as to retract the foreskin.

On the 15th these ulcers were considerably improved, but the flaccid penis had bent downward, producing excoriation where it rested upon the sleeve and causing an enlargement of the inferior ulcer. I then made two holes in the roof of the oven and, by attaching surgeon's plaster to the glans and passing two strings therefrom through the holes and tying them outside maintained the penis in a fairly erect position. The small ulcers improved immediately and were definitely healed on March 19th. The large ulcers were so much better at this time that the patient begged to return to his hotel after one week's sojourn at the hospital.

On March 20th, I noticed some abrasions on the glans at and under the edges of the adhesive plaster and these became infected. No such effect was observed in the preceding case and it can only be attributed to the unexplainable policy on the part of the hospital management of using the old fashioned plaster for all cases instead of the surgeon's zinc oxide. These sores were much more obstinate than the original large lesions, the smaller of which healed on March 22nd, and the larger on March 27th. For some anatomical reason, either the difference in the epidermic layer or owing to the sensitiveness always caused by a long prepuce and the irritation of decomposing smegma, or both, phagedæna of the glans extends more rapidly and deeply than upon any other cutaneous area. These new ulcerations spread over the greater part of the lower half of the glans and surrounded the meatus.

Another reason for this relapse was the fact that the patient had become restless and insubordinate, beginning treatment late, spending a long time at his meals which he went out for, and picking at the lesions with his nails in spite of my remonstrances.

After about eight or nine days, however, he became alarmed and again began treatment in earnest, with the result that on April 13th, the lesions were practically healed and he was able to leave the city. On April 16th he wrote me, "everything is entirely healed." I admit that, in this case, the results were not so rapid as could be desired but, had not the irritating plaster been used, the patient could have been discharged in a little over two weeks from the beginning of the hot air treatment.

At the time the patient left Rochester he had several papules on the face which looked like syphilides and there was some glandular enlargement in the neck and between the biceps and triceps, so I instructed him to return in a few days. He did so on April 25th, showing unmistakable symptoms of syphilis. In his case papules preceded the roseola. Inunctions with mercurial ointment were at once instituted. On April 27th, I examined the penis and found that the rather deep ulcers in the glans had filled up to their original outline and the scars of the large ulcers had nearly disappeared.

CASE IV. G. H., referred by Dr. R. R. Canna of Amsterdam, N. Y., to Dr. Edward L. Keyes, Jr., and referred by him to me. This patient had a chancroid and following it a bubo in the right groin, which began to suppurate in March, 1909, became phagedenic and spread upward upon the abdomen and downward upon the thigh. The ulcers enlarged in spite of treatment until, when he consulted me on September 9, 1909, several square inches were involved. Unfortunately I made no photograph. I advised the use of a bottomless electric oven which Dr. Canna had constructed.

Dr. Canna wrote me as follows on November 15, 1909: "I kept my patient in bed for one week, using the heater about fifteen hours a day. The secretions dried up, there was very little discharge, and the greater portion of the ulcer began to show healthy granulations. He said that it would be impossible for him to continue longer and went on a business trip using topical applications of thymol-iodide, etc. He still has a good sized ulcer but works every day. From my little personal experience with the heater, I can say that it certainly decreases the discharge and stimulates granulation more than any other treatment which I have used."

The oven, using an electric bulb as the source of heat, described in my previous paper having proved unsatisfactory, I have constructed a new model which soon will be ready. This consists of a box, eight and a half by six and a half inches, and five and a half inches high, with a detachable cover. A flat iron heater, one and a quarter inches in diameter and five inches long, is inserted near the end of one side a little below the centre. Extending across the box is a vertical shield, two and a half inches wide, its lower edge being one and a quarter inches from the bottom. This is necessary to prevent radiation and the consequent unequal heating of the penis. An orifice, two and a quarter inches in diameter, in the centre of the remaining floor space, six and a half inches square, admits the penis. An aperture, five eighths of an inch in diameter, near the bottom of this end of the oven provides ventilation. The thermometer, extending to within one half inch of the floor, is inserted through the cover near one of the distal corners. A rheostat enables the patient to keep the temperature at the required degree by enlarging or narrowing the aperture.

Both sides of the shield and the entire oven, inside and outside, are lined with asbestos paper. The oven with a kerosene (incubator) lamp as heater is also now being made with a detachable cover, since it facilitates the determination of the position of the penis and whether the lesions are properly exposed. These ovens can easily be sterilized without injury in an ordinary cook stove oven. They are made by the Kny-Scheerer Co., New York.

348 UNIVERSITY AVENUE.

THE INTRODUCTION OF LARGE QUANTITIES OF GASES INTO THE CIRCULATORY APPARATUS.

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Professor Welch, of Johns Hopkins University, has given us the bacteriological aspect of the presence of gases in the circulatory apparatus. The general treatment of the subject, by Green, clearly shows, however, how little is definitely known about the *introduction of gases into the blood vessels.* This is especially true in its relations to sudden death in surgery and to medicolegal practice and therapeutics.

According to the general experience of investigators upon this subject, a dose from 60 to 100 c.c. of air given at one time constitutes the usual fatal dose, causing death almost instantly. Ninety-five cubic centimetres intrajugularly in our experiments in untreated normal dogs usually caused death almost instantly. After a number of experiments with the previous introduction of glycerin or olive oil into the femoral vein, to prevent foaming or churning after introduction of large quantities of air, we have found that the use of these substances is not necessary. We have obtained as good results without the use of olive oil or glycerin.

We made, on January 22,[1] 1910, an intravenous administration of 3.5 c.c. of a fifty per cent. solution of glycerin in normal salt solution into a thirty-five pound dog, which was followed by the rapid introduction of 28 c.c. of air into the femoral vein, without any harmful symptoms or any trace of a kymographic disturbance. The next experiment, on January 26, 1910, the dog weighing ten pounds, was made to determine the toxic dose of glycerin when injected intravenously. The introduction of 7 c.c. of fifty per cent. glycerin in normal salt solution caused an immediate and marked drop followed by a slight rise in the arterial pressure. This was followed by another equally short drop in pressure, with heart paralysis. Respiration continued for a time and quite suddenly ceased.

February 1, 1910. Dog, thirty pounds. This dog was given 3 c.c. of fifty per cent. glycerin in salt solution in doses of 1 c.c. and 2 c.c. respectively; about three minutes after the administration of the glycerin, 85 c.c. of air in 5 c.c. doses were injected into the femoral vein during the next seven minutes, with no noticeable effects save a slight rise in blood pressure immediately following each injection. Five minutes later, 5 c.c. more were given in the same way, this produced a slight fall followed by a rise and fall in the pressure. A return to normal took place within thirty seconds. This was followed in thirteen minutes by 45 c.c. of air in the same way with similar results. Total amount of air injected was 180 c.c. This was followed in two minutes by 35 c.c. (215 c.c. in all) with similar results, i. e., slight fall in pressure with immediate recovery. Forty-five cubic centimetres of air after two minutes rest were given in the same way during a period of sixteen minutes. The total amount of air injected thus far into the femoral vein of the dog was 260 c.c. The jugular vein was next opened and 250 c.c. air were then injected into it during the following twelve minutes. This made a total of 310 c.c. of air introduced without evil effects, indeed the animal seemed to improve and often came out from under the ether. A cannula, one eighth inch in diameter, was next introduced into the left external jugular and the vent left open. No noticeable amount of air was drawn in and the condition of the animal remained the same. The vent was left open several minutes, and then the animal was instantly killed by the operator blowing his breath through the cannula into the jugular.

February 3, 1910. One cubic centimetre of a fifty per cent. physiological saline mixture of glycerin was introduced into the femoral vein of a thirty pound dog (brindle mongrel bull) without any noticeable vasodisturbance. Two hundred cubic centimetres of air were then insufflated into the femoral vein during the following ten minutes in twenty doses of 10 c.c. each. The insufflation caused a slight rise followed by an extremely slight fall in the vasopressure to follow each dose. Three cubic centimetres of the fifty per cent. mixture of glycerin in physiological salt solution were then injected into the femoral vein, this was followed by the insufflation into the femoral vein of 40 c.c. of air, three minutes after the prior administration of 200 c.c. within a period of three minutes, making a total of 240 c.c. No evil effects were indicated, the animal completely recovered from the shock and was apparently coming out from under the ether. One hundred and ninety cubic centimetres of air were then insufflated into the femoral vein within the next period of five minutes. The dog recovered completely from this insufflation of air and died later apparently from ether poisoning. The total amount of intravenously administered air given to this dog amounted to 430 c.c.

On February 15 1910 a fifty pound dog received 5 c.c. of fifty per cent. glycerin in three equal doses at intervals of about one minute. This dog received 100 c.c. of air into the femoral vein after four minutes had elapsed, during a period of three minutes in 5 c.c. doses, without any noticeable effect. One hundred cubic centimetres more were given in the same way, during the next three and one half minutes, with no bad effects. Two hundred cubic centimetres more were given during the next four minutes with no evil results. This made 400 c.c. in all. Two hundred cubic centimetres were again given during the next four minutes with no bad effect. This made a total of 600 c.c. The action of the heart continued good and then became slowed and the respiration deepened. The heart continued slow and there were four attacks of slight arterial depression. The blood pressure and the respiration returned in fifteen minutes to about as good a condition as at the beginning of the experiment. This dog was killed by repeated doses of commercial kerosene administered in doses of 5 c.c in an attempt to find the fatal intravenous dose of kerosene. The first 5 c.c. caused a moderate drop followed by a rise. In thirty seconds after the first dose 5 c.c more were given and a gradual fall took place. This fall continued during each of the following doses of 5 c.c. which were given at intervals of thirty seconds. Eleven doses were given in this way before the heart stopped, followed by cessation of respiration one minute later.

February 24, 1910. A fifteen pound normal mongrel dog was etherized and given an intravenous injection of 2.5 c.c. of olive oil mixed with 2.5 c.c. of physiological salt solution. This was followed in three minutes by the introduction of 5 c.c. of air into the femoral vein without any noticeable effect. At the end of the next six minutes somewhat less than 100 c.c. were insufflated into the femoral vein, at the end of the next three minutes 100 c.c. more were injected, this was repeated at the end of each following three minutes interval, seven times, making a total intravenous sufflation (allowing for leaking) of somewhat less than 900 c.c. within thirty-three minutes. At the end of the next period of three minutes, 5 c.c. of a fifty per cent. mixture of olive oil and physiological saline solution were injected into the femoral vein, this followed in one minute by 3 c.c. more of the same fifty per cent. saline mixture of olive oil. A small cannula needle (⅛ inch in diameter) was then introduced into the left external jugular and at the end of two minutes after the last oil injection, 70 c.c. of air were insufflated into the jugular within one minute, 30 c.c. more were insufflated into the jugular within the next thirty seconds. No marked effects followed these administrations. At the end of the next minute 100 c.c. more of air were insufflated into the left external jugular during a period of thirty seconds. Excessive panting followed this, but the animal appeared strong and otherwise well. He would have recovered to all appearances, if left undisturbed. Total of air insufflated thus far 1,105 c.c. At the end of the next interval of one minute, 100 c.c. of air were again insufflated very rapidly within thirty seconds, and in one minute following its insufflation the animal after givng vent to a cry of distress with labored breathing, stiffened and died still under the influence of ether. An occasional respiratory gasp followed at intervals of about from forty-five to sixty seconds during the next few minutes. The total amount of air given intravenously to this animal amounted to 1,205 c.c.

February 25, 1910. A normal mongrel dog, weighing fifteen pounds, was used as a control upon the work of previous investigators, to ascertain the maximum fatal dose of air when introduced into the jugular of normal dogs untreated by injections of glycerin or oil. The dog was put completely under ether, and then the small cannula needle was introduced into the left external jugular, and then within a period of one minute, 60 c.c. of air were insufflated. The animal panting and gasping appeared to be dying. The insufflation was continued and 30 c.c. more of air were insufflated, at the end of which administration the dog was dead. A few gasps followed at the end of from thirty to sixty seconds intervals during the next few minutes. The fatal dose of air insufflated into the jugular continuously then is apparently from 60 to 90 c.c. in this type of dog. The air was introduced by means of Hempel's gas burette.

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[1] This investigation was sent in for publication before the article on the Treatment of Air Embolism by Blair and McGuigan in the *Annals of Surgery*, for October, 1910, came to our notice.

February 28, 1910. With a view of controlling the results following the prior administration of olive oil solution, we did the following experiment: A normal mongrel spaniel dog, weighing eighteen pounds, was etherized and received about one half hour later, 5 c.c. of a fifty per cent. mixture of olive oil in physiological saline solution, into the left femoral vein. One minute later 2.5 c.c. of the same mixture and then again 2.5 c.c. of it, after an interval of one and one half minutes, were injected. We waited five and one half minutes and then insufflated through a cannula, 1/16 of an inch in diameter, which had been introduced one and one half inches into the left exteral jugular and firmly ligatured in position, one hundred cubic centimetres of air, measured by means of Hempel's gas burette during a period of one and one half minutes. The heart stopped at the end of this period, and the respiration almost immediately ceased. The animal made no panting or other sound. A few gasps followed during the next three minutes, and the animal was dead.

We believed at first that these experiments would be explained by supposing that an increased viscosity of the blood was acquired through the introduction of glycerin or olive oil, that these substances gave an increased tolerance for the presence of air in the blood stream or that they acted on the blood mixed with air as oils on the breaking waves of the stormy sea, in that they prevented the bubbles or waves from breaking, and thus gave the heart a solid medium to compress on. But the experiments upon the untreated dogs show these previous injections of glycerin or oil to be unnecessary. It would, moreover, appear to be probable that small amounts of air and gases are absorbed in the blood stream before it reaches the heart.

The ability to introduce large quantities of gases, such as oxygen, into the circulatory apparatus could be readily used if made practical in the treatment of disease, where oxygen and gases are therapeutic factors. Gas poisoning, drowning, anæmia, blood poisoning, and similar diseases which readily suggest themselves, might very well be especially appropriate for this treatment. It has been noticed, for instance, that the symptoms of ether intoxication or poisoning, in the animals used for these experiments, have often been markedly relieved.

We have noticed that when the closed aperture where the gas had been introduced was opened that gas appeared, indicating that the attempts of the circulatory apparatus to return to normal had caused this gas to be expelled at this point. It would appear that with a proper vent or regulatory apparatus a large amount of gas could be introduced by this method, i. e., the introduction of gases into a part of the circulatory apparatus. An opening or vent in the vein permits the air or gas to be expelled through it from the bottom of a cavity filled with saline solution. The opening or wound in the bloodvessel is closed by the saline solution. It may work out that different degrees of pressure are withstood by different saline solutions, but it appears from our work that normal salt solution gives the best results. This corresponds to Bunsen's valve for gas generators.[2]

CASE OF A SESAMOID BONE OF THE KNEE.

By J. Dawson Whitall, M. D.,
Philadelphia.

A. G., colored, æt. thirty-four, occupation laborer, fell on August 7, 1910, and struck his right knee a severe blow. He had some discomfort for several days following the injury though not excessive. About a week following he noticed that when he bent his knee in certain positions it locked the knee joint. In feeling his knee he found a small lump which he could move about very freely from below to above the patella. It was becoming more painful.

I saw him, on September 1, 1910, when he was referred by Dr. C. B. Sterner to the surgical clinic of the Northwestern General Hospital. The knee was carefully examined and a mass about the size of a filbert nut (freely movable) was found. Its position was to the right, upper, and outer portion of the quadriceps extensor tendon. A spicule of the condyles or patella was suspected. The case was referred to Dr. M. K. Fischer for x ray examination.

X ray examination showed no fracture of either condyles or patella. The mass was regular, cast a good shadow (hence cartilage was excluded), and its position was above and to the outer side of the patella.

Diagnosis:—Sesamoid bone.

Operation:—Under ether a small longitudinal incision was made through the quadriceps extensor tendon over the mass. A capsule was found, incised, and about a drachm of thick colorless serum exuded. The bone (which was easily removed) measured about one inch by three quarters of an inch, was flat, smooth, and resembled a miniature patella. The incision was closed and a small wick of gauze introduced for drainage. The wound healed promptly, and the function of the joint is normal.

The trauma was probably just enough to dislodge the bone which had been in the tendon sheath for years without causing symptoms.

2025 Chestnut Street.

Medical Students of the German Universities. —During the summer semester, 1910, there were matriculated in the twenty-one German universities 10,263 medical students, which number is divided as follows: Berlin, 1,646; Bonn, 374; Breslau, 414; Erlangen, 289; Freiburg, 618; Giessen, 205; Göttingen, 262; Greifswald, 219; Halle, 285; Heidelberg, 513; Jena, 307; Kiel, 351; Königsberg, 347; Leipzig, 632; Marburg, 343; München, 1,881; Münster, 224; Rostock, 172; Strassburg, 377; Tübingen, 304; Würzburg, 500.

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[2] Morphine sulphate and ether were used for anæsthesia in all cases.

CLINICAL STATISTICS.[*]

By Ira S. Wile, M. S., M. D.,
New York.

In ordinary circles of life the very word statistics is shrouded with gloom and appears most popular only in its absence. To physicians, however, there is no term worthy of greater attention. Medicine is built upon statistics and its progress is marked by statistics. Despite this fact medical men have not taken a strong position in the accumulation of those figures which are most essential to proving the relation of medicine to the social facts that are at the foundation of much of the illness that flesh is heir to.

The entire subject of epidemiology is dependent upon the cooperation of physicians in making accurate diagnoses and prompt returns thereof to the proper health authorities. The determination as to the ætiology of an epidemic of typhoid fever lies in the scrutiny of the reported cases. To fix the responsibility upon a milk route, or upon a water supply, or upon a typhoid carrier there must be a careful accumulation of the reports of the attendant physicians as well as the later investigations of the suspected causes by elaborate laboratory methods.

To-day poliomyelitis is being placed in the category of contagious diseases, not merely because there are epidemics of this disease reported but because the clinical statistics are showing that the disease bears all the marks of the contagious diseases; and the experiments of Flexner, and Lewis, and Levaditi, and Landsteiner are proving the truth of these statistics.

In every up to date city the department of health has maps studded with pins of different colors to show the location of the contagious diseases. The clinical statistics make it possible to single out the "lung blocks" and to arrange plans for overcoming such pest holes.

In taking the ordinary history of a patient there are many omissions that are of value when later ascertained. Does the income of a man bear any relation to his illness? Chapin, in his studies, found the following expenditures for health:

$400 to $500 class spent $14.18, 3.1 per cent.; $500 to $600 class spent $10.30, 1.9 per cent.; $800 to $900 class spent $23.30, 2.6 per cent.; $1,000 to $1,100 class spent $14.80, 1.5 per cent.

This small expenditure in terms of money indicates a condition of general good health or else the people made good use of gratis service in dispensaries, etc. The percentage of the total income is high enough to receive attention. If one considers the expenditures by nationalities, there is more light shed upon the question:

	$600 to $700 class.	$1.000 to $1,100 class.
United States spent....	$11.09, 1.6 per cent.	$13.55, 1.3 per cent.
Teutonic spent	$15.33, 2.3 per cent.	$7.72, 0.7 per cent.
Irish spent	$17.05, 2.6 per cent.	$21.00, 2.3 per cent.
Colored spent	$7.95, 1.2 per cent.	$1.00, 0.1 per cent.
Russians spent	$14.38, 2.3 per cent.	$32.92, 3.1 per cent.
Italians spent	$18.75, 2.8 per cent.	$11.53, 1.3 per cent.

The Russians, Italians and the Irish appear to have greater expenditures for health in both groups, but it does not mean that they have more illness than the colored, for example, whose susceptibility to disease is particularly marked and whose expenditure for health in both groups was the least.

Investigation further showed that in the $600 to $700 class, forty per cent. received free medical aid, in the $1,000 to $1,100 class sixteen per cent., in the $400 to $500 class seventy-five per cent. received free medical aid. A full investigation of the morbidity as related to incomes would therefore be dependent upon the statistics of hospitals and dispensaries even more than of the general practitioners.

It has been estimated by Fisher that each individual has thirteen days' illness each year. Farr calculated that for each death in the community there are at least two years of illness. How is all this sickness distributed? There is no way of telling. Mr. John Mitchell estimated that for every 100,000 tons of coal produced in the United States one mine worker is killed, but how many are injured? How many cases of venereal disease are there per annum? What is the morbidity rate of typhoid fever, measles, endocarditis? Who knows? What is the number of births per annum? Of deaths? No State has complete records of the births. In a few States the necessity of having copies of birth certificates for entrance to the public schools or for securing the working papers has drawn attention to the common neglect on the part of birth attendants to register the additions to the population, and these figures are the most essential of all statistics.

According to the *Bulletin of the New York State Board of Health,* in 1908, twenty-two out of sixty-one counties of the State had a registered death loss in excess of their registered births. This might be indicative of race suicide, but the explanation lies in carelessness and neglect for which physicians are in a large measure responsible. The State can compel prompt registration of vital statistics but it should not be necessary, as the medical profession should appreciate the importance of such figures and should willingly and freely offer them to the proper health authorities. In fact, in those communities where at present there is no system of registration, the doctors should unite in the demand that such deficiencies be corrected at the earliest possible date in the interest of the community. Germany, France, and Great Britain have fair systems of registration that warrant study on the part of health officers in all parts of this country, that this country may no longer be in the background as far as vital statistics are concerned.

The medical profession is most active in quoting statistics but the rank and file of its members are extremely passive in the cooperation that is essential for their acquisition. The time must come when every doctor will be engaged in compiling his statistics, so that the problems of health may have a better light shed upon them. Only by this means will morbidity figures be established.

Ayres investigated the causes of absences of over one week duration among 16,000 children in the New York public schools and found the following cases of illness causing the absences:

Measles	2,108	Accidents	258
Scarlet fever	1,550	Tonsillitis	251
Diphtheria	1,102	Broken bones	221
Pneumonia	621	Typhoid	219
Pertussis	473	Nervousness	207
Varicella	387	Appendicitis	204
Eye troubles	365	Rheumatism	200
Mumps	288	Other diseases	1,362

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[*] Read before the American Association of Clinical Research at Boston, Mass., September 29, 1910.

The average length of illness for boys was 3.2 months and for girls 3.5 months. The study of the morbidity of the school period is of great value and of moment in working out any scheme for protecting children at school from contagion as well as for lessening the danger of infection of the children at home through the medium of the children attending school. Physicians should promptly report all cases of disease that accurate recording may allow the prompt closing of any school that appears to be a center for the distribution of any disease.

It is a notable fact that the diseases of old age are increasing. Pneumonia, cancer, apoplexy, etc., deserve especial notice that the figures may be properly ascertained and the clinical causes accurately defined.

The relation of occupations to morbidity is warranted of sufficient significance for the State of Illinois to establish a commission to investigate this field. Minnesota and Wisconsin have given much thought to this phase of morbidity, and the United States Department of Commerce and Labor has published some valuable reports upon various industries as affecting the health of employees. The census of 1910 is to give particular attention to this question. In the future physicians must give more thought to the exact description of the occupation in filling out death certificates. Not alone the nature of the occupation should be determined, but the length of time thus engaged should be stated. If it is possible the record should go back to previous occupations. This may sound fanciful but it is essential for the correct interpretation of the effect of occupation upon the health of the community. There are, it is true, some diseases that are directly dependent upon occupation, as for example the twenty-eight industrial diseases recognized by the British Workmen's Compensation Act of 1906. At the present time there is no basis for the estimation of industrial accidents and diseases in this country. Hospitals, which may have the utmost care given to the physical examination of their patients, too often fail to state the occupations of the patients in clear terms. To merely enroll a patient as a laundress does not describe the occupation. The particular part of the work of the laundress must be stated. The term cutter may be further defined as hand or machine and the ailments dependent upon the two types are different to a great extent. Clinical statistics are of fullest value as relating to occupation only when the very refinements of occupations are noted. Hospital internes can easily be taught to give full records of occupations as well as of previous illnesses.

Physicians in charge of institutions caring for children as orphan asylums, nurseries, reformatories should aim to investigate the relation of accidents and diseases to the presence of the children in the institutions. To what extent is delinquency dependent upon disease in the child or in the parents? In how far is truancy affected by industrial accident? Physicians can help to solve problems of this magnitude and they are in every sense medical problems.

At present the mortality statistics of the United States are based upon the reports of seventeen registration States and seventy-four registration cities. How startlingly true is it that "in more than one half of the United States a human being can be born and can die without any record being made or official notice being taken of the fact." The active cooperation of the members of the medical profession could easily remedy this shocking state of affairs.

The relative morbidity of the blacks and whites is even a greater matter of conjecture than is their mortality. There is little or no effective registration in the southern States. Are the colored people having a square deal in the matter of health protection? Are the colored people a source of physical danger to the whites living in the same district or city? Present figures are few but they are very suggestive that there is a problem to be solved that at present is being utterly neglected. Why do southern cities separate the mortality figures of the whites and blacks? The figures of the registration cities wherein the colored population formed at least ten per cent. of the total population tells a pathetic story. Be it noted that in those cities the whites form 73.8 per cent. of the population and the colored form 26.2 per cent.

Number of deaths per 1,000 persons:

	1901 to 1905.	1908.
Total	20.4	19.1
White	17.5	16.5
Colored	28.4	26.2

The same sort of figures are found in the northern States. In the northern cities, possessing over 10,000 colored population, the following is to be found.

Number of deaths per 1,000 persons:

	1901 to 1905.	1908.	Percentage of population.
Total	17.9	16.3	100
White	17.5	15.9	96.8
Colored	29.9	28.1	3.2

Taking the State of Maryland for a basis of the relative mortality of tuberculosis there is a patent call to arms which would be more alarming if the morbidity figures were available. Deaths per 100,000 population from all forms of tuberculosis, 1908:

Cities.		Rural districts.	
Whites.	Colored.	Whites.	Colored.
192.3	515	118.6	276.6

Let the southern physicians gather more complete statistics regarding this problem. It is a form of constructive clinical research.

A fertile field for research would be a statistical investigation of the diseases of immigrants that present themselves at clinics within the first two years of their arrival to ascertain the effect of the American climate and the results of the attempt at adjustment to the new form of life due to changes in occupation, etc. The desirability of different nationalities might be based upon the incidence of various diseases or the rapidity of physical deterioration.

Medical experience can be crystallized in the form of statistics so as to be available for furthering the progress of the race. The careful compilation of the statistics relating to the effect of long hours of labor upon the health of women went a long way toward securing the victory in the Illinois case and to establishing the importance of health as affected by general legislative enactments for factories. Legislation that will ensue in this country, pertaining to employers' liability for accidents and diseases, must depend upon medical experience as reflected in clinical statistics. Social legislation clamors for the proofs of convincing statistics and the medical men should be the first to answer the call. If medical experience shows itself of any value, it is in its universality and comprehensiveness. From infancy to old age Statistics should be the companion of Time. And some future generation may find it desirable to keep a systematic statistical record of all its citizens from the cradle to the grave.

Complete registration of morbidity is a step in advance that at present is very weak. Such figures are needed to demonstrate causal relations. Many of the anæmias of workers in indoor occupations are due to underlying physical conditions. Much of the pallor that was attributed to labor in the textile mills of the south is now more properly blamed upon hookworm infections.

Housing reforms could progress more rapidly if adequate attention were bestowed upon the house morbidity rate. Villerme found in France, from 1821 to 1827, that an arrondissement with seven per cent. of badly constructed dwellings showed that one out of seventy-two persons died; one with twenty-two per cent. badly constructed dwellings, one out of sixty-five persons died; and one with thirty-eight per cent. badly constructed dwellings, one out of fifteen persons died.

The subject of congestion takes a prominent place in modern city life. The congestion within the houses as noted in a study of room congestion is worthy especial notice. Russell reported from a study in Glasgow that when the average number of persons to each room was only 1.31 the mortality was 21.7 per mille; but that when the room congestion was 2.05 to each room the mortality rose to 28.6 per mille.

The New York School Lunch Committee in the study of 217 families whose children were adjudged to be suffering from malnutrition found the number of persons per room to be as follows:

One person or less in a room..........	17	8 per cent.
1 to 1.5 person in a room.............	47	22 per cent.
1.5 to 2.0 persons in a room...........	63	29 per cent.
2 to 2.5 persons in a room.............	39	18 per cent.
2.5 to 3 persons in a room.............	38	18 per cent.
Over three persons in a room..........	13	6 per cent.

It is true that such figures do not exclude other causes of a similar nature, but they do serve as an indication that there is a matter of health bound up in the room congestion question. For still further corroboration one needs but the figures of Korosi for mortality from infectious diseases in Budapest. He ascertained that the mortality was

20 per mille. when the room congestion was only 2.0 to each room
29 per mille. when the room congestion was only 3.5 to each room
32 per mille. when the room congestion was only 6.1 to each room
79 per mille. when the room congestion was only 10. to each room

In the present agitation for the reduction of infant mortality one hears much of the milk question, but little of the work question. In the 101st session of the German Reichstag, Bebel stated that the mortality in Saxony from 1880 to 1885 of children under one year was 28.5 per cent. In the cities of large manufacturing industries this mortality rose from thirty-six per cent. to forty-five per cent.; and in the places like the neighborhood of Chemnitz, where women are employed in the highest number, the mortality rose from forty per cent. to over fifty per cent. Broggi in *Zeitschrift für Versicherungs Wissenschaft,* July, 1905, states that the child bearing coefficient was only forty-five per cent. for 172,365 Italian women between the ages of from fifteen to fifty-four years employed in industries or only one third the general fertility of Italian women. *Bulletin 80,* United States Department of Labor, reports that the mortality of children under one year is 160 per mille among working mothers as compared with 40.8 per mille among mothers not working.

The problems of morbidity are untouched in the trades of this country. Prinzing has shown that the days of illness are of higher average in females than males. Baer and Herman have shown that during sex life, women are more subject to loss of time from illness than men. Schuler in Vienna has demonstrated that 127 women are sick to 100 men in the same trade and that the women lose 150 days to 100 days lost by the men. Under the age of eighteen years the ratio is 174 to 100 men. There must be collected in the United States statistics to show the relative morbidity of the sexes in and out of industries that the proper health protection may be given the mothers, present and future.

It is impossible to discuss all the interesting phases of clinical statistics, but I wish at least to make a plea for more thought upon this part of clinical research. There exists the Second Decennial Revision of the International Classification of the Causes of Death. A committee of the American Medical Association is preparing a national nomenclature of diseases and causes of death. The American Public Health Association has established a standard death certificate. The medical profession can unite in using standard forms for record and should endeavor to utilize a uniform nomenclature. This is the first step in unifying statistics. The first step would be taken if the same form of blank that is used by the Census Bureau could be adopted throughout the United States.

A most valuable contribution in the field of clinical statistics could be made by the voluntary association of 100 physicians chosen from various parts of the country so as to include cities of small and large size as well as rural districts. They should represent men in districts of different types, as agricultural, mining, manufacturing, etc. They should represent the practice of medicine among the various nationalities. If each one of these men were to give full clinical reports for fifty families for one year there would be the morbidity statistics for one year of 5,000 families or 25,000 persons. Uniform charts could be devised so that the clerical work would be reduced to a minimum. I believe that at present there are throughout the United States small medical societies that could be of immense value to the community by taking up a piece of cooperative work of this nature. The number of families to be reported by the individual members could then be reduced to five or less, and the individual responsibility thus lessened. A full history of each member of the family should be given as far as possible, including age, occupation, hours of labor, and the numerous other factors that are of value in determining the full social status of the family. The compilation of a set of clinical statistics thus cooperatively acquired would be of great value and would be a pronounced factor in determining the extent of morbidity in a definite group as contrasted with its mortality.

230 West Ninety-seventh Street.

TREATMENT OF SYMPTOMS IN HOSPITALS.

By Beverley Robinson, M. D.,
New York.

One of the sad, disheartening facts connected with hospital service, particularly medical, in my observation, is the relative lack of interest by attending and house staff in the relief of painful or annoying symptoms of *chronic* disease. The diagnosis made and the prognosis determined, if cure seems impracticable, the patient does not always secure repeated, unwearying efforts to relieve symptoms, which are obligatory if the golden rule is followed in practice, as it should be. This lack of doing is doubtless explained by the too prevalent conviction that symptoms depend, of necessity almost, upon organic lesions, and if one cannot modify the lesions notably by treatment one cannot relieve symptoms. No greater, more lamentable, error exists. It is to this belief in part, among practitioners of reputation, that skepticism flourishes so largely and also quackery. The truth is we all, both good and bad, are compelled, usually, to try various remedies before we succeed in relieving symptoms, even for a while. If, however, we do not continue our trials hopefully, we are not often repaid by success. It is just here that it is most important to distinguish between the physician of character and the charlatan. The former uses continuously all his available knowledge to do most good and least harm; the latter is indifferent, provided he touches his ill gotten gains, whether or not he does temporary or permanent harm. But he, the bad man, is keen to act upon the fact, despite poor results in many instances, that often the difference between pain and comfort is bridged over by a very slight change—secretory, nervous, circulatory—which may be brought about by one, or another remedy, and is unaffected or made greater by many. Knowing this, he is not prevented from experimenting, despite much harm done through his ignorance and lack of conscience, when the honorable man hesitates or stops.

Examples are numerous to illustrate what may be accomplished by judicious interference based upon what the march of disease shows, and which it is our rôle properly to interpret, or on the other hand, upon mere personal idiosyncrasy. For example: Thoracic aneurysm may occasion painful spasms by slight pressure upon the vagus and a little later, from increased pressure, nonpainful paralysis of a vocal cord. Internal remedies, or local applications, may relieve the former condition, but cannot cure the latter. Hypodermic injections of distilled water may bring complete and immediate relief to pain of various kinds and seemingly dependent upon very different pathological changes. It is possibly the mere increase of pressure upon the nerves locally, which does the trick and not so called anodyne action due to absorption and ultimate physiological effect. Again, there are instances in which pain is relieved innocently and rapidly by a topical application which is at once counterirritant and locally analgesic. Notably, I would name combinations of menthol and lanolin. This effect may be increased by the addition of salicylate of methyl, and indeed by this addition a double effect is produced—one local and the other systemic. I have quieted or relieved nausea and vomiting by different remedies, and while one remedy has been useful in a particular instance, it was without good effect in other cases apparently not unlike—as a fact, no two people are ever alike and therefore the personal factor is important at all times in practice. I know a family in which nausea is relieved in one daughter with Rhine wine, in the other daughter by Kirschwasser, in the mother by milk of bismuth, and in the father by melissa water.

The foregoing remarks are merely suggestive, but if laid to heart, hospital rounds would be happier because diagnosis and prognosis having been settled, frequent, continuous efforts would then be made carefully and advisedly to relieve or cure mere symptoms of disease while awaiting the outcome. It might be, alas, as is often true, that our best efforts fail and morphine hypodermically is our final and only resort.

42 West Thirty-Seventh Street.

AN IMPROVED OPERATING AND OBSERVATION ENDOSCOPE FOR THE ANTERIOR URETHRA.

By Joseph Francis McCarthy, M. D.,
New York,

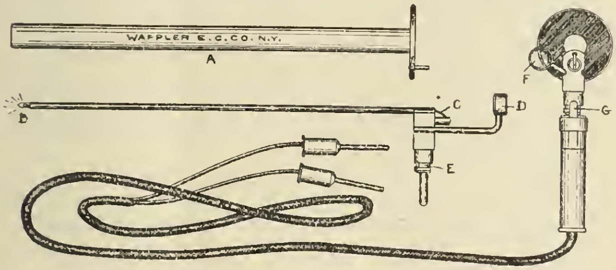
Assistant Attending Genitourinary Surgeon, Bellevue Hospital;
Instructor in Surgery, New York Postgraduate Hospital.

Prior to observing the work of Luys, in Paris, with his instrument, the author's efforts in endoscopy of the anterior urethra were, to say the least, discouraging. With, however, the magnificent view afforded by the lens arrangement in the Luys tube mentioned and the beautifully clear cut magnified picture obtained in this manner it became at once apparent that the hitherto rather difficult task of diagnostication and treatment of pathological lesions of the anterior urethra had resolved itself into a question of observation of a sufficiently large number of cases in order to acquire proficiency.

Two years work with this endoscope, efficient as it has been found, has convinced the writer that a closer approach to perfection could be achieved by the addition of one or two refinements, as well as improvements in a number of small but exceedingly important details, and his efforts in this connection are herewith presented in the accompanying cut.

Letter *A* shown in the cut indicates the ordinary Chetwood tube of 26 French calibre, smooth round bore. At *B* is an exceedingly small lamp, attached to which is a slender wire running the entire length of the tube and emerging at *C* where it fits into a small groove on the rod below; and should the lamp burn out it is only necessary to release this wire, withdraw it from the small tube and replace with a fresh one. Letter *D* shows an improved lens attachment placed about one inch away from and smaller than the opening in the endoscopic tube. This may be focused at will, or deflected as seen at *F*, and is so adjusted as easily to permit of the various applications to, or other operative procedures on the urethral mucosa, meanwhile maintaining a brilliant magnified picture. At *E* is a circular groove with a series of depressions alternating metallic and ivory in nature, and into which fits the tongue of the connecting arm *G*, and rotation of the latter in either direction from one to the other of these depressions produces the make and break of the current. (Universal attachment employed in author's cystoscope.)

The instrument is first introduced with its obturator, the latter then withdrawn, and the light and lens carrying attachment adjusted to the sheath by means of two grooves which fit over corresponding rods on the endoscopic tube; affording in this manner absolute rigidity. The mucous surface is then gently dried with cotton on a small wire applicator, the wooden ones being altogether too bulky for this work. The current is then connected as described and the entire anterior urethral mucosa is exposed to the eye with the utmost clearness, and by the usual methods of traction, herniation, and digital pressure below the tube, all or any part of the mucous membrane may readily be seen and treated.



McCarthy's improved endoscope of Luys.

The advantages, therefore, of this instrument, as may be seen from the foregoing description, are, simplicity of construction, ease of adjustment, absence of jarring, and a clear, clean cut magnified field maintained continuously throughout whatever operative steps that may be deemed necessary by the operator.

While it is a matter of common knowledge, that the urethroscope has been regarded by many operators in this country as an instrument of little or no practical value, it is none the less a fact, that in numerous pathological conditions such as circumscribed lesions of the glands of Littré and the lacunes of Morgagni, as well as in papillomata and other outgrowths of the urethra; lavage and the various glass tests afford data of little or no clinical value, and that many cases may only be rendered clear by actual inspection.

To well illustrate this point it is only necessary to relate a case recently reported by the author to the Section in Genitourinary Diseases of the Academy of Medicine. The patient had been treated by a number of medical men both here and abroad, over a period of two years without success, and failing to respond to the usual treatment at the writer's hands, an endoscopic examination with this instrument revealed at the site of the bulbomembranous junction a well pedunculated, branching papilloma.

137 EAST FORTY-THIRD STREET.

ACUTE MYELOGENIC LEUCHÆMIA.

With a Report of Cases.

BY JOHN A. WOLFER, M. D.,
Chicago.

The cases of acute leuchæmia are so infrequent that every case should be studied and reported. Especially should this condition be kept in mind since the onset so closely resembles that of an acute infection of one of the hæmorrhagic diseases. Three cases coming under the observation of Brandenberg (1) which had been diagnosticated before death as morbus maculosus Werlhofii.

In looking through the literature one is impressed with the fact that the line differentiating the lymphatic from the myelogenic type is arbitrarily drawn. Some think that all acute cases of leuchæmia are myelogenic, that is primarily a disease of the bone marrow. Those cases with a high percentage of granular mononuclear cells, whether the general manifestation of the disease corresponds to that of the lymphatic or myelogenic type are, for the present, at least, classified as myelogenic. This is borne out by the view of Schultze (2), that the enlargement of the lymph glands, spleen, and liver is not a hyperplasia of tissue, but a collection of cells poured out by the bone marrow and is merely a symptom of a disease whose primary focus is in the bone marrow.

Since there are cases which are clear cut myelogenic, others equally plain lymphatic, and an intermediate group which we must classify as mixed, and since in all cases of lymphatic type there can be found marked changes in the bone marrow if one looks long enough, it seems to me that we are almost justified in saying that, at least, of the acute cases all are myelogenic and differ only in symptomatology.

The question as to whether a certain case of leuchæmia is acute or chronic depends on: 1. Onset, whether sudden or insidious; some patients have a long period of what might be called prodromata, such as malaise, weakness, loss of appetite, etc.; but the manifestation of disease itself is sudden and stormy. 2. The nature of the clinical course. 3. Duration of the disease; according to Fraenkel the time limit is four months, but the disease is most frequently cut short by an intercurrent acute infection.

The following case having a sudden onset, and terminating fatally in approximately four months, would readily classify as an acute leuchæmia, but the most characteristic features were the clinical course and the blood picture.

CASE I. R. H., male, age forty-three. Single. Patient was born in Pittsburgh, Pa., and there attended the public school. When grown up he worked about two years in a horse shoe factory, then began driving a coal wagon. After this he fired an engine on a river steamer for three or four years, then went into the ice business where he has been employed since. He did not have the diseases of childhood. He had typhoid fever twenty-four years ago; he was sick about two months with a relapse, but no complications, and made a good recovery. Eight years ago he had an attack of malaria which lasted for five years. Had herpes zoster eight years ago, which lasted three months. Says it was very severe but had no severe constitutional disturbances. Had gonorrhœa twice. First attack lasted about six months, second attack about a week. Had gleet and a slight urethral stricture. Never noticed any erosion on penis. Patient was never married. Smoked and chewed tobacco. Used alcoholics, both beer and whiskey, at times to access. He was the youngest of a family of two brothers and one sister, all healthy so far as he knows: two brothers and three sisters were dead, one of a paralytic stroke; one had a fever and died, cause not known; one died in childbirth; cause of death of others not known. Father died of kidney trouble; no history of malignant disease. Mother was always sick of rheumatism and probably died of heart trouble. He thought one brother who was a brass finisher had pulmonary tuberculosis. None, to his knowledge, had any trouble like his present affliction.

Present trouble. Patient entered the Cook County Hospital, in the skin service, on April 26, 1909, with the history that for the past week he had a swelling and pain in the right leg. The leg was diffusely red and he had difficulty in getting around. Said he did not know what caused it, as he had no abrasion of the skin nor had he injured his leg in any way to his knowledge. Also complained of a furunculosis which began about Christmas time, 1908. At that time he had about six furuncles, one on the back of the neck and one on the centre of his forehead. These he had about a week or so. He also presented a dermatitis on the backs of both hands and back of both ears. This had been present about one month. His hands showed an erythema, crusts, and small pustules, no vesicles present; had considerable itching which was most severe at night time.

Hot applications were used on the leg and inflammation cleared up in a few days. He was given internally calcium sulphide, 1/4 grain, every four hours. No local application on hands or face. Furuncle on the forehead was incised and it cleared up. On May 15, 1909, he was transferred to the surgical service for operation on carbuncle on back of his neck. A crucial incision was made. Up to this time no glandular enlargement had been detected. He came under my observation on June 1st as a convalescing patient.

June 2, 1909. While dressing his neck there was noticed a marked enlargement of the cervical glands. When asked he stated that he had not noticed any increase in the size of his glands until a day or so previously. Upon questioning regarding glandular enlargement he stated that in December, 1907, he had two hard lumps appear in the groin—one on each side. They were of about the size of a walnut—not tender or painful. Also had some œdema of scrotum. He used hot applications, and this œdema rapidly disappeared. Also stated that at this time he was feverish for two days. The tumor masses disappeared in about a week.

Examination. Glands of about the size of English walnuts found in the cervical, axillary, epitrochlear, and inguinal regions. Marked œdema of the legs, scrotum, and penis. No abnormal dulness indicating enlargement of mediastinal glands. Spleen about two fingers' breadth below the costal border. Liver enlarged about one finger under costal margin, edge sharp and not tender. Urine, acid; specific gravity, 1.020; albumin present; sugar none; hyaline and granular casts; few white blood corpuscles. Large amount of indican. Temperature, 98.6° F.; pulse, 80; respirations, 20. White blood corpuscles, 36,840. Differential count: Polymorphonuclear neutrophiles, 30 per cent.; eosinophiles, 16 per cent.; myelocytes, 30 per cent.; lymphocytes, 10 per cent.; unclassified, 14 per cent. Of these unclassified cells a few were of the mast cell variety. Others, large shadow cells, marrow lymphocytes, and the like. Of these large cells many measuring from twenty to fifty μ in diameter. The nuclei very large, the centre vesicular. Some of these cells appeared as mere shadows taking a pale blue stain when stained with Wright's modification of the Romanowsky stain. The nucleus could be distinguished from the protoplasm. The myelocytes were chiefly of the neutrophilic type although quite a few of the eosinophilic type were found.

The patient appeared rather sick and was prostrated. He was put to bed, put on gradually increasing doses of arsenic. With rest in bed his general condition improved. He soon began to have an afternoon temperature of 100° F., which lasted about a week. His condition remained about the same with a slight variation in the white count until June 28, 1909, when a severe ulcerative stomatitis developed. This continued with varying degree of severity for several weeks. He had an occasional mild attack of epistaxis.

July 1, 1909. White blood corpuscles, 20,000; red blood corpuscles, 3,720,000; hæmoglobin, seventy-five per cent. Differential count: Polymorphonuclear neutrophiles, 34 per cent.; lymphocytes, 5 per cent.; large mononuclear, 5 per cent.; myelocytes, 40 per cent.; transforming cells, 7 per cent.; eosinophiles, 9 per cent. Many broken down white cells especially of the eosinophilic variety.

X ray treatments triweekly were begun over the spleen, glands and long bones.

July 9, 1909. Still marked stomatitis. Nucleated red blood corpuscles found in the blood. White blood corpuscles, 25,200.

July 15, 1909. A temperature of 102.6° F. suddenly developed which rapidly advanced to 104.8° F.; pulse, 134. Face flushed. Patient complained of pain in the left leg. Examination showed a reddened area over left groin and extending down over the anterior surface of the thigh and up over the anterior surface of the abdomen. The borders were sharply defined and slightly elevated. The reddened area was brawny and tender. White blood corpuscles, 29,900. Patient was transferred to the contagious ward as a case of erysipelas. He made a rapid recovery and was readmitted to my service on July 24, 1909. The glands were scarcely visible at this time, spleen still palpable, and the patient said he felt fine. White blood corpuscles, 42,700. He still had transitory œdema of the legs and scrotum. Urine, pale yellow; specific gravity, 1.025; albumin none; sugar none; alkaline; casts none.

A gland was removed from the arm and microscopical examination showed a marked increase of the cellular content. The cells were almost all of a mononuclear type, large with varying degree of condition of perinuclear protoplasm. Patient had an occasional evening temperature of from 100° to 101° F.

September 1, 1909. Patient complained of a severe coryza and rhinitis. Epistaxis continued for eighteen hours and finally necessitating nasal packing. White blood corpuscles, 117,200.

September 2, 1909. Injected with 125,000,000 of the mixed toxines of streptococcus and prodigiosus.

September 4, 1909. Injected with 150,000,000 of Coley's mixed toxines. No reaction except quite marked local tenderness.

September 6, 1909. Injected with 175,000,000 of Coley's mixed toxines. Severe local reaction. This treatment was now discontinued. Patient at this time was still receiving x ray treatments.

October 1, 1909. White blood corpuscles, 23,840. Differential count: Myelocytes, 45 per cent.; lymphocytes, 3 per cent.; large mononuclears, 7 per cent.; polymorphonuclear neutrophiles, 38 per cent.; eosinophiles, 7 per cent.

Patient was now put upon hypodermic injections of 40,000,000 dead streptococci every third day. He had but little constitutional disturbance except in from eight to twenty-four hours a rise in the pulse rate.

The glands had by this time enlarged markedly. The spleen was about four fingers beneath the costal margin. Some tenderness over the tibias.

October 12, 1909. Patient complained of severe pain over the right side of chest and in the region of the heart. Coughed much. Cheeks flushed. Repirations rapid with an expiratory grunt. Had a tendency to lie on his right side. Chest, percussion revealed dullness over the right lower lobe of the lung; over this area can be heard tubular breathing and bronchophony. Heart action rapid but the tones good. No murmurs. Temperature, 102.6° F.; pulse, 112; respirations, 28. White blood corpuscles, 32,640. Differential count: Polymorphonuclear neutrophiles, 64 per cent.; eosinophiles, 0; myelocytes, 16 per cent.; lymphocytes, 13 per cent.; large mononuclears, 2 per cent.; mast cells, 5 per cent.

He was put on ordinary pneumonia treatment with cardiac stimulation by digitalis preparations intravenously and hypodermically.

Patient died on October 14, 1909, of cardiac insufficiency. Autopsy refused.

This in my mind is undoubtedly a case of acute leuchæmia of the so called myelogenic type, although there are certain phases of the cycle of the disease which differed from the majority of cases reported. The patient presented at different times a varying degree of severity of symptoms. For a period of a week or more he would be about feeling well and then he would rather suddenly become ill with usually a marked weakness and inability to get around. Unfortunately an autopsy was refused but without a doubt there were marked changes in the bone marrow since such a blood picture could hardly be imagined without marked changes in the bone marrow. The disease was not so severe or fulminating as a majority of the cases but there was present a marked tendency to develop intercurrent infection.

The points which stand out prominently in this case are:

1. Presence of a previously existing furunculosis and dermatitis.

2. Sudden appearance of enlargement of the lymph glands with œdema, this coming on almost over night and accompanied by weakness and prostration.

3. The very striking blood picture. A previous blood examination was not made, as the patient was under hospital observation and nothing developed in his condition which demanded blood analysis.

4. The intercurrent panorama of symptoms such as stomatitis, epistaxis, glandular, splenic, and hepatic enlargement, and acute infections.

The following cases which have been reported seem to fall under the classification of a so called acute myelogenic leuchæmia as considered at the present time.

CASE I. Van der Wey. 1896. (3). Female, age twenty-three. Past history negative. Present trouble began with headache, general malaise, ringing in the ears, pain in the left shoulder and dizziness. Examination showing cervical, axillary, subaxillary, inguinal, and cubital glands enlarged. Spleen, palpable. Six weeks later her general condition became suddenly worse, rise of temperature, epistaxis, and a rapidly progressing anæmia. Death three months after onset of disease. Blood examination: Red blood corpuscles from 2,840,000 to 900,000. White blood corpuscles, from 175,000 to 300,000. Hæmoglobin, from sixty per cent. to twenty-two per cent. The white cells being classified as follows: Polymorphonuclear neutrophiles, 33 to 3.7 per cent.; eosinophiles, 1.9 to 0.3 per cent ; myelocytes, 60 to 96 per cent. A few lymphocytes were found. Large mononuclears were classified with myelocytes.

Autopsy. Enlargement of the glands. Bone marrow, very soft and of a mushy consistence, having the appearance of blood mixed with pus.

CASE II. Thompson and Ewing. 1898 (4). Female; age, twenty-one. Past and family history negative. Had complained of frontal headaches for six months. Six weeks previous had a sore throat which lasted two weeks. The right arm became swollen, red and painful and remained so for three weeks. Three days before coming under observation she fainted and fell striking on her left side after which she complained of severe pain in the abdomen. She began vomiting and her temperature ranged from 102° to 105° F. Slight hæmorrhage from the nose. Spleen, scarcely palpable. Lymph glands, not enlarged. Death less than eight weeks from onset. Blood examination: Red blood corpuscles, 1,290,000. White blood corpuscles from 50,000 to 100,000. The white cells being classified as follows: Polymorphonuclear neutrophiles, 55 per cent.; eosinophiles, occasional; myelocytes, 12 per cent.; mononuclear, 33 per cent. Post mortem examination of the blood showed the following differential count of the white cells: Polymorphonuclear, 48 per cent.; eosinophiles, 0.3 per cent.; myelocytes, 17 per cent.; mononuclears, 17 per cent. No mast cells found. The granules of the myelocytes were indistinct.

Autopsy. Leuchæmic infiltration of the spleen, liver, and lymph glands. Bone marrow showing an enormous number of myelocytes and an absence of fat.

CASE III. Grawitz. 1900 (5). Female; age, forty-two. Past history negative. Onset with a long continued hæmorrhage following the extraction of fourteen teeth. This was followed by a severe stomatitis and necrosis of the jaw. Great prostration, retinal hæmorrhages, enlargement of the spleen and cervical lymph glands. Death two weeks after onset. Blood examination: White blood corpuscles, 190,000, classified as follows: Polymorphonuclear neutrophiles, 10 per cent.; small mononuclears, 5 per cent.; large mononuclears, 15 per cent.; eosinophilic myelocytes, 10 per cent.; neutrophilic myelocytes, 60 per cent.

CASE IV. Ewing. 1901 (6). Male; colored, middle aged. For two months had been troubled with gingivitis and hæmorrhages from the mouth and bowels. Progressive anæmia with rise of temperature. Lymph glands, enlarged. Spleen, moderately enlarged. Patient died suddenly with enormous tympanites and collapse. Blood examination showed large numbers of neutrophilic myelocytes.

CASE V. Ewing. 1901 (6). Male; young adult, very short course, sudden death. Spleen and glands, moderately enlarged. Red blood corpuscles, 1,080,000. Hæmoglobin, twenty per cent. Post mortem examination of the blood showing white blood corpuscles, 31,000, the cells being classified as follows: Mononuclear, 61 per cent.; neutrophilic myelocytes, 31 per cent.; eosinophilic myelocytes, 2 per cent.; polymorphonuclear neutrophiles, 6 per cent. Few mast cells were found. Nucleated reds quite numerous.

CASE VI. Stewart and Campbell. 1901 (7). Male; age, six. Family and past history, negative. Caught cold in the spring of the year and was never well after this. Patient was anæmic and had loss of appetite. Submaxillary glands enlarged; spleen, not palpable. Had an irregular temperature. Frequent epistaxis. Complained of pains in the legs. Death approximately two months after onset of disease. Blood examination two days before death: Red blood corpuscles, 750,000; white blood corpuscles, 40,000; hæmoglobin, twenty-one per cent. White cells classified as follows: Lymphocytes, 25 per cent.; polymorphonuclear neutrophiles, 45 per cent.; myelocytes, 27 per cent.; eosinophiles, 3 per cent.; normoblasts were numerous.

CASE VII. Elder and Fowler. 1901 (8). Male; age, thirty-four. Family history negative. Trouble began with pain in the back and legs. Was easily exhausted. Examination showed mild stomatitis, caries of teeth, spleen and liver, not palpable, heart and lungs, negative except for rather feeble heart action; urine, negative. Later hæmorrhage from the bowel, headache, and epistaxis developed. Rise of temperature. Death one month after onset. Blood examination: White blood corpuscles, 5,800 to 20,000; red blood corpuscles, 3,000,000; lymphocytes, from 29 to 28 per cent.; polymorphonuclears, from 46 to 56.8 per cent.; eosinophiles, from 2.2 to 4 per cent.; myelocytes, from 13 to 21 per cent..; nucleated reds present.

CASE VIII. Hirschfeld and Alexander. 1902 (9). Male; age, twenty-one. Trouble began with swelling of a foot which was soon followed by a swelling of the lower jaw. The latter was treated by the extraction of a tooth which wound bled profusely, later forming an ulcer. Submaxillary glands slightly enlarged. Spleen, not palpable. Blood examination at this time showed hæmoglobin, 35 per cent.; red blood corpuscles, 2,000,000; white blood corpuscles, normal in quantity and quality. Anæmia increased with moderate fever. After five weeks spleen and glands much enlarged. Death two months after onset. Blood examination before death showed red blood corpuscles, 1,125,000; white blood corpuscles, 64,000; hæmoglobin, 10 per cent.; small mononuclears, 7.4 per cent.; large mononuclears, 19.2 per cent.; polymorphonuclears, 63 per cent.; myelocytes, 8.6 per cent.

CASE IX. Michaelis. 1902 (10). Female, age, fifty.

Previously had pneumonia and peritonitis. Menopause at forty years of age. Present trouble began ten weeks ago with cough, expectoration, and pain in the left hypochondrium. Examination: Lymph glands, not enlarged; mouth and throat, normal; slight fever; urine, negative; spleen, enormously enlarged filling almost left side of abdomen. Patient dyspnœic and complained of pain in the region of the spleen. Pallor increasing. Red blood corpuscles, 3,450,000; White blood corpuscles, 16,000; hæmoglobin, 40 per cent.; some poikilocytosis; small mononuclears, 20 per cent.; large mononuclears, 56 per cent.; polymorphonuclears, 16 per cent.; eosinophiles, 0.4 per cent.; mast cells, 0.4 per cent.; neutrophilic myelocytes, 7.2 per cent.; moderate number of normoblasts. Death fifteen weeks after onset.

CASE X. Billings and Capps. 1903 (11). Male; age, sixty-eight. Past history negative. Trouble began with an ulceration at the root of a tooth. At this time his blood was normal. A month later patient began complaining of weakness, anorexia, indigestion, constipation, and sleeplessness. Body, emaciated with marked pallor. Slight rise of temperature. Spleen and lymph glands not enlarged and no evidences of hæmorrhage. The patient rapidly became worse, subcutaneous hæmorrhages and bleeding from the gums in the region of the necrosis developing. Temperature from 102° to 103° F. Patient died from asthenia two months after onset. Blood examination: Red blood corpuscles, from 2,000,000 to 1,700,000; white blood corpuscles, from 540,000 to 374,000; hæmoglobin, from 40 to 30 per cent.; small mononuclear, from 4 to 1.6 per cent.; large mononuclear, from 39.2 to 22 per cent.; polymorphonuclear, from 24 to 21.2 per cent.; eosinophiles, from 1.6 to 0.4 per cent.; mast cells, from 0.8 to 0.4 per cent.; myelocytes, from 30 to 54.4 per cent.

CASE XI. Fowler. 1903 (12). Female; age, five. Family history negative. Had measles, whooping cough, and chickenpox during infancy. Had been complaining of sore throat recently with enlarged cervical glands. On examination patient was anæmic and complained of loss of appetite, weakness, tonsils were enlarged. A bruit could be heard over the heart Spleen and liver, much enlarged. Urine, negative. No hæmorrhages. Fever. Death four and a half months after onset. Blood examination: Red blood corpuscles, 2,700,000; white blood corpuscles, 240,000; lymphocytes, from 7 to 13 per cent.; large lymphocytes, from 32 to 56 per cent.; polymorphonuclear neutrophiles, from 16 to 22 per cent.; neutrophilic myelocytes, from 12 to 27 per cent.; eosinophiles, from 0.6 to 2.6 per cent.; eosinophilic myelocytes, from 0.7 to 3.4 per cent.; mast cells, from 0.3 to 4.4 per cent.; normoblasts numerous.

CASE XII. Pfannkuch. 1904 (13). Male; age, twenty-three. Patient had been noticing swelling of the legs and enlargement of the abdomen. Onset was sudden vomiting, headache, cough, and exanthem and icterus. Patient was very anæmic. Lymph glands much enlarged. Temperature, early 96.5° F.; pulse, 118. Patient was very dyspnœic. Examination showed bilateral pleuritic effusion, and ascites. Spleen extending down to the umbilicus. Liver enlarged. Gums swollen and tender. Urine, acid, albumin, and casts present. Death approximately two weeks after onset. Blood examination: Red blood corpuscles, 2,500,000; white blood corpuscles, 1,000,000; lymphocytes, 76.5 per cent.; myelocytes, 10.6 per cent.; polymorphonuclear neutrophiles, 12 per cent.

CASE XIII. Arneth. 1905 (14). Male; age, ten. Onset sudden with vomiting, epistaxis, icterus, and severe toothache. Complained of pain in the abdomen. Patient became rapidly prostrated and comatose. Liver and spleen slightly enlarged. Bones, tender. Urine showing some albumin. Death two days after onset. Blood examination: Red blood corpuscles, 256,000; white blood corpuscles 10,600; hæmoglobin, 10 per cent.; polymorphonuclear from 43.9 to 53 per cent.; myelocytes neutrophilic, from 13 to 15.1 per cent.; myelocytes eosinophilic, from 0.6 to 0.5 per cent.; eosinophiles, from 0.2 to 0.3 per cent.; large lymphocytes, from 4.9 to 5.8 per cent.; lymphocytes, from 35.3 to 22.9 per cent.; large mononuclear, from 2.1 to 2.4 per cent.

CASE XIV. Kerschensteiner. 1905 (15). Female; age, forty-one. Patient had been complaining for three weeks with diffuse pain all over the body and general malaise. Liver and spleen extending to umbilicus. Sudden death. Blood examination: Hæmoglobin, 16 per cent.; red blood corpuscles, from 885,000 to 825,000; white blood corpuscles, from 6,700 to 5,300; polymorphonuclear, from 77.5 to 78.3 per cent.; eosinophiles, from 0.3 to 1 per cent.; lymphocytes, from 10 to 5.5 per cent.; myelocytes, from 8.2 to 8.6 per cent.; large mononuclear, from 4 to 7 per cent.; mast cells, 0.1 per cent.

CASE XV. Lazarus and Fleischmann. 1905 (16). Female; age, forty. Past history negative. Trouble began with sore throat, fever, and epistaxis. Later dysphagia, ecchymosis about the eyes, and œdema of the legs developed. The hæmorrhages becoming more generalized involving the glutæal regions and the mucous membranes of the nose and mouth. Gums, swollen and lips ulcerated. Tonsils, red, swollen and covered with an exudate. Very fœtid odor from the mouth (culture from the tonsillar exudate showing staphylococci and streptococci). Cervical glands, enlarged. Liver and spleen, enlarged. Heart showed ventricle somewhat enlarged and a systolic murmur could be heard over the præcordium. Respirations, 40. Urine gave a marked diazo reaction, otherwise negative. Hæmorrhages became more severe. Spleen later reached the midline. Patient, who was about three months pregnant, now aborted and the hæmorrhage was so severe as to necessitate uterine packing. Red blood corpuscles, 1,600,000; hæmoglobin, 55 per cent.; white blood corpuscles, from 91,000 to 191,000 to 288,000; large mononuclear, 61 per cent.; neutrophilic myelocytes, 30 per cent.; eosinophilic myelocytes, 0.8 per cent.; lymphocytes, 6 per cent.; polymorphonuclear, 1.1 per cent.; no mast cells found. Many of the cells were of such morphology that it was very doubtful as to what class they belonged.

CASE XVI. Mager and Sternberg. 1906 (17). Female; age, thirty-four Family history negative. Had been sick for ten days with general malaise, weakness, and chilliness alternating with flashes of heat. No children. Menses regular. Patient was fairly well nourished although anæmic. Temperature, 102.2° F. No delirium. Tongue, clean. Cervical glands, moderately enlarged. Chest, negative. Respiration, 34. Liver, two fingers breadth under the costal margin. Spleen, from the seventh rib extending down to within 2 cm. of the umbilicus. (Patient complained of a sense of pressure within the abdomen). Œdema of the legs. Widal reaction, negative. A week later petechia appeared over shoulders, elbows and breast. Glands, much enlarged. Temperature, high. Two days later, red blood corpuscles, 3,241,000; white blood corpuscles, 3,200; hæmoglobin, 40 per cent.; polymorphonuclear, 81 per cent.; mononuclears, 19 per cent.; no myelocytes. An occasional eosinophile was found. Death occurred suddenly. Autopsy showed 21 per cent. of myelocytes in the blood, hæmorrhagic erosins of the mucous membranes of the stomach.

CASE XVII. Emerson. 1907 (18). Male; age, twenty-seven: white. Onset was with general malaise. Pains in the limbs and abdomen and anorexia. Patient perspired profusely. Lungs, right normal, left showed impaired resonance and a few râles. Heart showed a systolic blow over the præcordium. Spleen palpable but only slightly enlarged. Liver, normal. Dulness in the flanks which shifted with changing the position of the patient. Lymph glands, apparently not enlarged. Red blood corpuscles, 4,300 000; white blood corpuscles, 12,000; temperature, 104; diazo and Widal reactions, negative. A few days later petechia appeared over the sternum. Liver enlarging and tender; spleen also larger. White blood corpuscles gradually rising to 56,000; polymorphonuclear, 41 per cent.; large mononuclear (granular and nongranular), 44 per cent.; lymphocytes, 10 per cent. Eight days after onset marked necrosis of the gums appeared and a few days later white blood corpuscles, 184,000. The clinical course suggesting either typhoid fever, miliary tuberculosis, or acute endocarditis. Autopsy showed a perforation of the intestine.

CASE XVIII. Ziegler and Jochmann. 1907 (19). Male; age, fifteen. Previous history, negative. Sudden onset with vomiting, headache, sore throat, and marked prostration. Glands not enlarged. Mouth dry. Lungs negative except for an occasional râle. Area of cardiac dullness enlarged. Heart tones, good. Spleen, not palpable. Urine, negative. White blood corpuscles, 45,600. In the following few days there was a gradual increase of the area of the cardiac dullness. Patient seemed sick, and there was apparent impediment to the heart action. Paracentesis præcardii showed a considerable amount of bloody fluid, cultures from which showed group cocci Blood culture. negative. Two weeks after onset, hæmoglobin, 50 per cent.; red blood corpuscles, 1,648,000; white blood corpuscles, 18,200; temperature, very irregular; pulse, fast. Severe epistaxis. Dyspnœa. Pericardial rub developing. A few days later paracentesis præcardii again showed quite a considerable amount of bloody fluid and cultures from which showed cocci as found before. White blood corpuscles. 252,000; myelocytes, from 65 to 69.5 to 72 per cent.; polymorphonuclears, from 14 to 16 per cent.; lymphocytes from 8.5 to 5.5 to 6 per cent.; eosinophiles, from 1 to 0.5 to 0.25 per cent.; "überganszellen," from 8 to 9 to 5 per cent.; nucleated reds, from 1 to 1.25 per cent.

Death occurred seventeen days after onset due to hæmorrhagic pericarditis. Autopsy: Spleen much enlarged; hæmorrhagic pericarditis with effusion and some adhesions; lymph glands, not enlarged.

Case XIX. Benjamin. 1908 (20). Male; age, nine. Five weeks before examination patient complained of pain in the abdomen and for the past three weeks had been in bed; he was very anæmic. Spleen, not palpable. Generalized enlargement of the lymph glands. Pulmonary tuberculosis was suspected, but von Pirquet and Moro reactions were negative. Red blood corpuscles, 3,500,000; white blood corpuscles, 19,800; hæmoglobin, 60 per cent. Spleen became palpable reaching two to three fingers under the costal margin. Liver was also enlarged. In a few days gangrenous stomatitis developed. Death nine weeks after onset. Three blood examinations showed as follows: Red blood corpuscles, 4,100,000, 1,890,000, 1,492,000; white blood corpuscles, 22,400, 20,000, 44,600; hæmoglobin, 65 per cent., 36 per cent., 27 per cent.; polymorphonuclears, 8.8, 2.5, 9, 15.9; eosinophiles, 2, 0.5, 0.12; myelocytes, 16.5, 9.2, 13.5, 13.6; myeloblasts, 35.5, 84.2, 34.5, 31.6; large mononuclears, 0.5, 1.5, 1; lymphocytes, 46.8, 41.5, 37.5; nucleated reds found. Autopsy showed marked changes of the bone marrow with a complete absence of fat. Many myelocytes were present

Case XX. Herz. 1909 (21). Onset was sudden with pain in the little toe extending up the leg. High temperature. Patient became prostrated and stuporous with marked cyanosis. Lymph glands, enlarged. Lungs, negative except for an occasional râle. Systolic murmur over heart. Abdomen tympanitic. Spleen and liver, palpable. Urine, albumin present: sediment contained casts, leucocytes, and red blood cells. Blood: Hæmoglobin, 100; red blood corpuscles, 5,900,000; white blood corpuscles, 16,800. Differential count: Polymorphonuclears, 6.7 per cent.; myelocytes, 8.07 per cent.; large mononuclears, 80 per cent.; lymphocytes, 1.4 per cent.; "Uebergangsformen," 3.9 per cent.; no eosinophiles or mast cells. Death in one day. Autopsy showed among other conditions a staphylococcus abscess of the kidney, beginning fibrinous pericarditis and peritonitis, and acute swelling of the lymph glands and spleen. The little toe showed excoriation of the skin.

The following cases might possibly be classified as acute myelogenic leuchæmia although there is a possibility that some other process is causing the peculiar symptomatology or there was insufficient data for diagnosis.

Case I. Bloch and Hirschfeld. 1900 (22). Male; age, nine months. Family history not known. Child was anæmic and on examination showed a right side pneumonia, lymph glands and spleen, enlarged, and evidences of rickets. Blood smear showed polymorphonuclears, 28 per cent.; myelocytes, 10.2 per cent.; small mononuclears, 27.14 per cent.; large mononuclears, 38.8 per cent. This blood picture might be explained by the fact that there was an acute infection superimposed upon rickets.

Case II. Schultze. 1906 (2). Male; age, thirteen Sudden onset with sore throat and a diagnosis of diphtheria was made. Patient was given antitoxine. Hæmorrhages developed under the skin. Pulse, 120. Spleen, palpable. Marked gingivitis. Patient died suddenly ten days after onset. White blood corpuscles, 560,000 (post mortem). Autopsy diagnosis: Acute myelogenic leuchæmia.

Case III. Von Hausemann. 1907 (23). Case running a very short and acute clinical course. No blood report. Spleen enlarged. Autopsy showed acute endocarditis, lymphoid follicles, and Peyer's patches of the intestines much enlarged, and in every way conforming with the condition of typhoid fever. Diagnosis: Acute myelogenic leuchæmia.

Case IV. Bauermeister. 1909 (24). Male; age, forty-four Family history, negative. Onset with severe pain in the lumbar region with tenderness and stiffness. Head and neck, negative. Chest, negative. Spleen and liver, palpable. Urine, negative. Stomach contents: Free hydrochloric acid, 16; combined acids, 20. Weber reaction, negative. Cammidge reaction, negative. Blood: Hæmoglobin, from 75 per cent. to 80 per cent. Specific gravity, 1.054 No leucocytosis. Stained specimen showed a few large mononuclear cells with granules. Then developed an intercurrent attack of influenza with a generalized adenitis and rise of temperature. Later developed an enlargement of the spleen and liver. Marked prostration. Stomatitis bcame very severe and petechia appeared on the back and gluteal regions. A Giemsa stain of the blood showed many nucleated reds, no poikilocytosis, many mast cells, and few polymorphonuclears and lymphocytes; the urine now having a very heavy sediment with albumin and casts. Death very sudden of apparent internal hæmorrhage.

The last four cases had insufficient data to make a diagnosis and the real pathological condition was diagnosticatetd only at the post mortem table.

Schmidt reports two cases of acute myelogenic leuchæmia in *Mitteilungen der Gesellschaft für innere Medizin und Kinderkrankheiten in Wien*, 1909, viii, 91-94 (was unable to obtain this article).

Turck (25) after carefully studying several cases of acute leuchæmia comes to the conclusion that a septic process is the initial lesion. Erb (26) although in doubt as to a septic process being primary, reasons that due to the poor state of nutrition of the blood making organs especially in regard to the production of polymorphonuclear leucocytes, there are produced the large amount of *Mikrophagen* of Metchnikoff.

When one studies the histories of the cases of acute leuchæmia, both lymphatic as well as myelogenic, and finds as is so frequently found a history of infection such as furunculosis, caries of the jaw, and the like, one is obliged to think seriously of this theory. In the case cited by Billings and Capps the caries of the bone was present for some time before the pathological blood findings, as, at the time the mouth changes were observed, Cabot examined the blood and no evidence of leuchæmia was found.

Sabel and Satterlee (27) report a case illustrating the close similarity between acute leuchæmias as regards clinical symptomatology also favoring the theory of Pappenheim (28) that both types of leuchæmia have a common origin and are only different manifestations of the same pathological process, and that polynuclear and mononuclear cells have the same ancestry. This is directly opposed to the theory of Ehrlich (29) who teaches us that each type of leuchæmia is an entity; the lymphatic due to a morbid process in the lymph glands and the myeloid due to a similar process in the bone marrow; also that the lymphocytes and myelocytes are totally different as to origin and cycle of development.

Schultze (2) advances two theories as to the cause of leuchæmia: 1. The parasitic; 2. the neoplasmatic. The fever, acute splenic tumor, hæmorrhagic diathesis, mouth affections, and leucocytosis speak for infection. He mentions a number of men who have isolated various organisms from acute leuchæmias but there was nothing constant found. Auer (30) observed a peculiar refractive body within the blood cells and also in stained specimens a peculiar rod shaped body. He says nothing positively as to whether he thinks this might be the exciting organism but asks for more observations from different men.

Banti (31) speaks of leuchæmia as a sarcomatosis and Truck (25) divides the lymphomatosis as follows: 1. Aleuchæmia, a, benign, lymphadenoma; b, malignant, lymphosarcoma. 2. Lymphocytosis. 3. Lymphæmia, a, acute leuchæmia; b, chronic leuchæmia. Thus he shows the close similarity, if not the same process, between sarcoma and leuchæmia. Jousset (32), on the theory that acute leuchæmia was a disease with a bacteriological cause, injected from 5 to 10 cm. of blood of a leuchæmia patient into the peritoneal cavity of each of seven guineapigs. Four died within a few days of peritonitis. In those that lived developed leucocytosis and enlarged spleen. Zamferescu (33) persistently obtained cultures of staphylococci and streptococci from the ulcerations of a leuchæmic patient while the blood cultures were negative. J. L. Miller (34) tells of an incident wherein a physician attending a leuchæmic patient enlarged glands and a lymphycytosis developed which very gradually subsided.

We know that certain pathological conditions of the bone produce a blood picture similar to that of leuchæmia. Kast (35) tells us that metastatic carcinoma of the bone causes a blood picture resembling that of a myeloid leuchæmia.

We can plainly see that so far as the exciting cause of leuchæmia is concerned, we are as yet in doubt. The thing that impresses me as most forcible is the presence of an infection somewhere in the body. Whether this infection need be in the bone or whether there is a necessity of some morbid process other than the one in the bone marrow, cannot at present be definitely stated.

There are many striking features of acute leuchæmia which at present have not been satisfactorily explained. In most cases there is a hæmorrhagic diathesis; in fact several patients died from collapse resembling that of concealed hæmorrhage. Is this tendency to bleeding due to changes primarily in the vessel wall, or due to blood changes? The amount of fibrinogen in the blood is about normal (36) and the calcium salts are increased due probably to destruction of bone (37), and yet we find a poor coagulability and a tendency to bleed from the mucous membranes. Running parallel to this process are the marked changes in the mouth. I think without doubt that the hæmorrhages from the nose are caused by broken down leuchæmic infiltrations. In my case there were frequent mild attacks of epistatics, but none so severe as to necessitate nasal packing. On rather superficial examination no ulceration could be found, but a previously existing stomatitis and the generalized enlargement of the glands, made me think of a similar condition in the nose. Edsall (38) reports a case in which a leuchæmic infiltration of the tissues about a tooth was the cause for its extraction. Suschanek (39) reports an examination of the nose of a leuchæmic patient and finds the epithelium normal. The submucosa much thickened and infiltrated with round cells. He says nothing regarding the epistaxis so frequently found. Mayer (40), in giving a very minute description of his findings in the nose of a leuchæmic patient, describes it as follows: The anterior part of the septum was covered with yellowish crusts. Upon removing these crusts there was a profuse hæmorrhage. The surface over this area was devoid of epithelium. Sections through that portion of the septum where the epithelium was intact shows upon microscopical examination that the epithelium was normal, no infiltration of cells, the vessels were all much enlarged. Some sections showing an infiltration of the submucosa. Sections across the areas of ulceration showed the cartilage to be absent. In this region where the cartilage formerly existed the cellular content was very poor, but surrounding this area there was a marked infiltration of leucocytes. He makes a final statement that leuchæmia causes generalized infiltration of the mucous membranes with a marked dilatation of the bloodvessels. Elschnig (41) says: "In leuchæmia the veins are increased three to five times in diameter. The ratio between the content of the veins to the much enlarged arteries is changed, due to the fact that the veins are dilated more than the arteries." The problem as to whether all these ulcerations are due to poor nutrition with secondary infection or are broken down leuchæmic patches, is still an open question. In those cases in which ulceration of the gums and buccal surfaces appears early one can scarcely overlook the fact that they are an infection, but when they appear simultaneously with enlargement of the lymph glands and spleen, then the problem becomes complex.

Gumprecht (42) explains the presence of xanthine bodies in the urine by the fact that the nuclei of the cell are transformed; the nucleins forming the xanthine bodies.

Several cases are reported having large amounts of indican in the urine. This was also true in my case. The fact can be explained as due to intestinal motor insufficiency or to decrease of the flow of digestive juices due to anæmia.

The blood examination of an acute myelogenic leuchæmic presents a varied picture. In regard to the red cells one find all degrees of poikilocytosis, from the most marked as seen in pernicious anæmia to the slightest degree of seeing one in a great number that is distorted. Nucleated reds have been observed in large numbers. Some cases present none. There is not, as a rule, a marked variety of size of the cells as seen in pernicious anæmia, although megalocytes and megaloblasts are found at times. The decrease in the number of red cells is probably due to a disturbance of normal differentiation of the primitive parent cell into red cells (43).

Free proteoses are found in the serum, and according to Erben the neutrophilic granules readily decompose in the process of autolysis to form proteoses. In this respect the neutrophilic granules differ from the eosinophilic granules which remain intact and blood rich in mast cells after autolysis show little or no proteose.

The leucocytes are the cells which show the greatest amount of change in the acute type of this disease. One finds a large cell measuring from twenty to forty $\mu\mu$ in diameter with a rather poorly staining nucleus. The perinuclear protoplasm hardly visible. No granules by any stain. Again cells distinctly of the mast cell variety.

Eosinophiles in my case were numerous, although Ewing (44) states that in acute leuchæmias of both types and in chronic lymphocythæmia, eosinophiles are scarce or absent. A peculiar fact about the leucocytes of eosinophilic type is that the cytoplasm containing the eosinophilic granules is very fragile. Da Costa (45) thinks that "fractured cells" are due to injury during the preparation of the specimen; but why should a cell fracture at one time and when exactly the same technique is used at another time no fractured cells are observed? I notice that the administration of arsenic caused a large amount of these fractured cells to appear in the blood while previously none were observed.

Myelocytes of all types are found, although those of the neutrophilic variety are the more numerous. There also appears from time to time a difference as to size and shape of the nuclei. One finds a gradual shading of the morphology of one cell into that of another and there is often a doubt as to how it should be classified. Other cells are seen with granules which are so faint as to be scarcely visible, and one hesitated in calling them neutrophilic cells. There appears in most cases a class of cells which are distinctly of the embryonic type. Large cells with nuclei often vesicular. They appear to be even more embryonic in type than the myelocyte. This is the cell that Browning (46) speaks of as "the progenitor of both the granular and the nongranular cell type in the fœtus is the large mononuclear cell with nongranular basophilic cytoplasm." This is undoubtedly a primitive cell (18), and near the genesis of original differentiation (19). This cell is known by various writers as "large lymphocyte" (Pappenheim), "lymphoid cell of marrow" (Turck), "myeloblasts" (Nagele), "myelogonien" (Benda), "myelocytoblast," "premyelocyte," and "undifferentiated leucoblast."

There is a great variation in the number of white cells, but we find quite frequently that in the acute stage the total number is not high. Some are even remarkably low.

The very interesting subject of the reaction of a leuchæmic patient with an intercurrent infection is very ably discussed by Dock (47). Stintzing (48) reports a case of leuchæmia with a tuberculosis of the lung. With an exacerbation of the tuberculosis there was a decrease in the size of the lymph glands and the white blood count decreased. The spleen remained the same. Richter (49) reports a case of leuchæmia with an intercurrent attack of erysipelas. There was a decrease in the number of leucocytes, the percentage of polymorphonuclears increased, and there was a disappearance of the mononuclear cells. Kraus (50), in a case with intercurrent pneumonia, reports a white blood count of 420,000, falling to 460 in one week. The spleen decreased in size and the myelocytes disappearing. Trosch (51) reports a case with intercurrent pneumonia, the white blood count falling from 119,000 to 42,500, but with an extension of the disease the count rose to 172,000 and death. Oette (52) and Froelich (53) report similar results. In Dock's case (47) the white blood count fell from 367,000 to 4,775 in two weeks, with an intercurrent attack of influenza. After the attack the count rapidly rose to 707,000 again. Malignant disease may also cause a decrease in the number of white blood cells with a relative increase of the polymorphonuclears (54). In my case, with the intercurrent infection of erysipelas, there was a marked decrease in the size of the glands, and the general condition of the patient was very much improved, although the white count was increased. With the onset of pneumonia there was an absolute increase in the polymorphonuclears. I think this demonstrates that the ability to maintain an equilibrium between polymorphonuclears and other cells is not abolished in leuchæmia. Again the total white count was somewhat increased.

The treatment of leuchæmia is still in the experimental stage. By far the most satisfactory results have been obtained with arsenic and x ray. Results with x ray are described in great detail in an almost endless amount of literature, but the favorable results are very well illustrated in the case reported by Brown and Jack (55). They observed a decrease in the size of the spleen. The white count decreasing and a gradual reduction in the number of myelocytes. The general condition of the patient was much improved, although death eventually interceded. The mistake is often made in that the x ray treatments are given over glands and spleen alone when our knowledge of the pathology teaches us that the long bones are the seat of the trouble and we should direct our treatment to them.

There are a certain class of cases in which x ray treatment seems to have no effect, and this fact has stimulated workers to find a new treatment. A normal salt solution, with 1 in 5,000 formaldehyde (Bailey, 56) was given intravenously, but results were unsatisfactory. Jacob (57) reduced a white blood count from 850,000 to 282,000 by injecting a glycerin extract of spleen, but there was no essential improvement in the condition of the patient. Richter (49) injected spermine, Richter and Spiro (58) injected cinnamic acid, Henck (59) used tuberculin, Gerhardt (60) used oil of turpentine. All of these treatments were unsatisfactory. Capps (61) prepared a leucolytic serum from a patient treated by x ray. This only produced a temporary improvement.

On the theory that leuchæmia was a process similar to sarcoma, and since Coley has reported such encouraging results in the treatment of sarcoma with the mixed toxines of streptococcus and prodigiosus, Larrabee (62) conceived the plan of treating leuchæmia in a similar way. He reports some five cases; one giving a practical symptomatic recovery, another showing marked improvement, a third gained in weight. He administered the toxines beginning with 0.1 drop daily and increasing until about two drops are given daily. Baldauf (63) tried the same treatment, but the patient died of intercurrent attack of pneumonia.

Although I had not heard of Larrabee's treatment I had formed the same opinion concerning the treatment of leuchæmia with Coley's Fluid, and began using it. There was such a marked reaction after giving three injections that I discontinued the use of it and began using the streptococci vaccine alone, basing my theory on the fact that my patient showed such a marked improvement after his erysipelas infection. The fatal intercurrent pneumonia cut short the treatment.

CONCLUSIONS.

In conclusion I wish to advocate three points:—

1. The diagnosis of acute leuchæmia necessitates more frequent blood examination, not counts alone, but examination of the stained specimen, for I am certain quite a few patients go unrecognized and their death certificates are signed as some acute infection when the patient really succumbs to an acute leuchæmia.
2. After diagnosticating the condition let us study the case and try to establish an ætiological factor.
3. I shall like to see the vaccine treatment more thoroughly tried, and, with Larrabee, urge every practitioner whose duty it becomes to treat a leuchæmic patient to try this treatment and report results.

I wish to thank Dr. J. A. Capps and Dr. Joseph L. Miller for their many helpful suggestions, and Dr. H. L. Thorpe for his untiring efforts in perfecting the staining of the blood films.

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BLACKSTONE HOTEL.

SOME STEPS TOWARD THE PREVENTION OF POSTOPERATIVE EXUDATES.

By William Edward Dicken, M. D.,
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Postoperative exudates are of vast importance for the welfare and comfort of our surgical cases after operative interference. I have been very much surprised, however, in investigating this question to find so little written about a subject, in my opinion of such vast importance to the surgeon.

The exudates that are thrown out after surgical intervention are in exact ratio of amount of tissue abrasion. There are several forms of exudates that we may mention in abdominal surgery, and I may say here that the exudates I shall speak of will be confined to the abdomen and pelvis exclusively.

Owing to the frequency of parametritic exudates and the great variety of physical signs, to which they give rise, the differential diagnosis is supremely important. Exudates may be mistaken for any kind of hard tumor in the neighborhood of the uterus. Inspissated exudates especially the spherical, intraligamentary masses with broad attachments to the uterus, may closely resemble subserous myomata. Intraligamentary peritoneal exudates are much less likely to be mistaken for myomata because the contents are fluid, and remain fluid for some time, but ultimately they become inspissated, the consistency more firm, and the outline at the same time more regular, thereby greatly assisting the diagnosis. Inflammatory exudates differ from ordinary transudates (limp and serous fluids) in their higher specific gravity and their definitely increased amount of proteid matter; it is, however, in connection with serous surfaces, that fibrin tends to form, and its formation in this region is associated with the breaking down of leucocytes. It is to this fibrin that we owe the plastic adhesions in serous cavities, and these adhesions play a most important part in limiting the spread and generalization of many bacterial inflammations.

One has but to study the highly vascular and sensitive great omentum in connection with localized abdominal inflammation to observe how time and again a portion of it becomes firmly cemented over some infected area of one or other abdominal organ. We have found such omental adhesions over danger spots on the walls of the stomach and abscesses about to burst into the liver, over ulcerated areas of the duodenum, and on the floor of the pelvis, covering over the stump of a removed uterus. Every one knows the constancy with which these exudates occur in connection with the inflamed appendix, but we must here point out that very often these adhesions are productive of harm, as we may have with such exudates a prolonged pleurisy, a kinking and obstruction of the bowels, torsion, internal hernia, etc.

The diagnosis of parametritic exudates, as with other exudates, is usually based upon the finding of a tumor in the pelvic connective tissue, presenting certain important characteristics determined by external and internal examinations.

In order of frequency postoperative exudates occur in the omentum, sigmoid, small intestine, and rectum. The intestines may become adherent to the abdominal or vaginal incisions. On account of the anatomical position of the omentum, it touching also every organ within the peritonæum and also the plevic floor, it may be seen how readily are produced abdominal lymphocytosis, circumscribed infected zones, and the covering of abraded surfaces.

The symptoms are practically of no value in the differential diagnosis between myoma and exudate, even in an old exudate pain may be completely absent. On the other hand if the trouble began acutely with fever, this points to an exudate. Neither can we depend for positive information upon a leucocyte count, for an old exudate has no influence on the number of leucocytes.

Frisch reports a case that illustrates the importance of this differential diagnosis. "Many years ago," he says, "I did an ovariectomy upon a patient who had come a long distance on account of a myoma as large as a fœtal head with severe hæmorrhage. The patient had no fever and left the hospital cured. Ten weeks later severe fever began and I discovered a parametritis at the usual site above Poupart's ligament; the pus was discharged and the tumor disappeared. I had mistaken an old exudate for a myoma and the ovariectomy was entirely useless."

Experimental adhesions of the peritonæum of dogs may be produced by undue exposure to dry air, cold air, mechanical trauma, and culture of microorganisms. Therefore in operating upon the human subjects these factors should be avoided; success is only achieved after careful practice in the minutia of technique. An operator may have great surgical judgment and extraordinary manipulative dexterity, and yet fail in the details of technique, as exhibited by himself or his assistant. We must therefore take notice of the temperature and humidity of the operating room, and must remember that for a prolonged exposure of the peritonæum the most suitable atmosphere is, theoretically, one that is very moist and of the temperature of the peritonæum. Practically, this is never found, because operating staffs dislike to work under such conditions. An atmosphere charged with moisture at temperature of 90° F. is perhaps the limit of endurance for prolonged surgical work. Defect in this respect in atmospheric conditions may to a great extent be made good by the avoidance of unnecessary exposure of viscera, protecting everything, save the immediate area of operation, with gauze pads soaked in hot normal solution.

The next most important step to pursue is the avoidance of trauma of the peritonæum; sponging should be employed as little as possible, and all manipulations should be carried out with great gentleness, the injudicious use of retractors is likewise to be deprecated. Care should be taken in removing tissue or separating adhesions that there be left no exposed areas, when it is possible to bury them under the peritonæum. Small areas on the parietal peritonæum, omentum, bladder, broad ligaments, and mesenteries may usually be easily covered with adjacent peritonæum by means of continuous catgut.

If we find it impossible to perform peritoneoplasty, we can often bring down a portion of the omentum and with a few stitches of fine catgut protect the abraded surface. I have found it advisable in abrasions of the rectum to even cover the same with the uterus. We should also be very careful to avoid any raw surfaces in the closure of our peritoneal incision, thus to exclude any raw edge from the peritoneal cavity to avoid omental adhesions to the abdominal scar.

In removal of the uterus, tumors, or infected tubes and ovaries, where extensive separation of adhesions has to be carried out, I have found it advisable to use portions of the broad ligaments with the intervening uterine peritonæum, forming a flap across the pelvis to be turned backward and stitched to the parietes and rectum, so as to form a new covering on the pelvic floor. Sometimes in extensive raw areas I stitch the uterine ligamentous flap to the upper part of the rectum and its mesentery, as it lies in a natural oblique direction across the pelvis. In this way the pelvic cavity may be entirely shut off from the general abdominal cavity and the latter may often be left without a single raw area; furthermore, the general abdominal cavity will be protected from the infected pelvis and the vaginal drainage may be kept up without any risk. Thus we can in most cases use the rectum and peritoneal flaps to cover the pelvis completely. And if a gap should be left in the right posterior half of the brim the cæcum if movable may be used (after removal of the appendix) to complete the deficiency, it being attached to the rectum and parietal peritonæum by a few stitches of fine catgut.

All operators in abdominal work have had some patients who complain for months and even years of pain and dragging sensations even more so than of their preoperative pain, while on the other hand there are patients who leave the hospital saying they had never felt better and able to go about their accustomed duties with no discomfort. The former class, however, suffering from extensive exudates which may be absorbed and their pain disappear, or they may become organized and firmly adherent, when the pain will never cease. This pain is induced or exaggerated by exercise. It is dragging in character, indicating that the intestine or omentum is under traction.

I recall a typical case, Mrs. S., aged thirty-eight, upon whom two years previously a retroperitoneal shortening of the round ligaments for the correction of a retroversion had been done, and during this length of time the patient was never free from a dragging sensation and cramplike pain in the right iliac region, in fact the pain became so intense at times that her family physician suspected an abscess formation. The patient returned seeking relief. Cœliotomy was performed and upon careful examination of the viscera I found nothing abnormal except a slight exudate and adhesion of the end of the appendix to the parietal wall. Appendicetomy was performed and complete relief was the result.

Adhesions of the omentum cause less immediate trouble than those of the intestines, but the omentum has not the power of loosening itself, so to speak, as have the small intestines. For this reason I give a laxative early after my abdominal operations, that peristalsis may be reestablished and adhesions broken up. I have had patients to take horse back rides daily, for the purpose of breaking up postoperative exudates, with good results.

In conclusion, I wish to urge upon the surgical profession the importance of a proper technique, appreciating the significance of adhesions, and so operate that adhesions will not form again or will not originate *de novo*.

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Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CIV.—How do you perform vaccination? (Closed November 15, 1910.)

CV.—How do you perform circumcision? (Answers due not later than December 15, 1910.)

CVI.—How do you treat obesity? (Answers due not later than January 16, 1911.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question CIII has been awarded to Dr. Meyer A. Rabinowitz, of Brooklyn, whose article appears below.

PRIZE QUESTION CIII.

THE CONDITIONS FOR THE DISCHARGE OF A PATIENT WITH PULMONARY TUBERCULOSIS AS CURED.

By Meyer A. Rabinowitz, M. D.,
Brooklyn, New York.

A patient can be discharged as *apparently* cured only when he has fulfilled all the following conditions:

1. All constitutional symptoms meaning, a, elevation of temperature; b, loss of weight; c, loss of strength; d, night sweats; e, chills; f, tachycardia; g, cyanosis; h, anorexia; i, amenorrhœa, etc., have been absent for a period of at least three months.
2. His sputum on repeated examinations has shown an absence of tubercle bacilli for a period of at least three months.
3. A physical examination reveals the signs of a healed lesion. The signs of a healed lesion are usually those of infiltration or consolidation, with the exception that râles must be permanently absent, except perhaps a few râles heard only on cough, or inspiration following cough at the end of prolonged expiration, either at the base or one apex or over a small portion of one lung only.

A patient can be discharged as *really* cured only when:

1. All constitutional signs have been absent two years under ordinary conditions of life—including no rise of temperature when taken repeatedly one half to one hour after meals.
2. His sputum on repeated examinations for two years, under ordinary conditions of life, shows an absence of tubercle bacilli.
3. At end of these two years his lungs show the physical signs of a healed lesion.

1681 Prospect Place.

Dr. C. W. Coutant, of Llano, Texas, observes:

In order to answer this question one must be well posted on the pathology and also physical signs of this trouble. Without going extensively into the pathology, but starting with the primary tubercle that has passed through the various changes to a cure, the result is the formation of lime salts, which become chalky and calcified, the destruction of the bacilli, fibrous encapsulation, and finally cicatrization.

Every student of pulmonary tuberculosis is familiar with the physical signs, hence I will not go into that phase of the subject, but will get right down to the main issue: When can a pulmonary tuberculosis patient be discharged as cured?

We must remember when we speak of a cure in pulmonary tuberculosis that we must consider it from three points of view, pathologically, physically, and subjectively. Pathologically speaking, we never know whether our patients have reached a pathological cure until after post mortem examination. Physically, we say that when all the physical signs of pulmonary tuberculosis have disappeared, when the sputum is free of germs, when there is absence of rise of temperature, fatigue, and all of the complexed symptoms of the trouble, the patient is ready to be discharged as cured. By subjective signs I mean the evidence of cure as felt by the patient himself. This is not always a true cure, because we know that although the patient may feel perfectly well, at the same time there yet remain physical signs of the trouble.

Disregarding the subjective phase of the cure, I believe we can safely discharge our patients when there is absence of all symptoms, when on auscultation we find the signs of a healed process, when after repeated examinations we find the sputum free of germs, and when the patient fails to react to ten milligrammes of tuberculin. The last is the only true test of a cure and should be given six months after the completion of treatment. If our patient fails to react at this time we know that he is cured.

Dr. B. G. R. Williams, of Paris, Ill., writes:

In consideration of our imperfect knowledge of the ætiology, course, and treatment of this disease, the rule which I am giving may be followed invariably: *Discharge unconditionally as cured no patient with pulmonary tuberculosis.*

Although we are sometimes justified in dismissing, with extended advice, a case from active treatment, we seldom get the opportunity in private practice—we usually lose sight of the patient before this point is reached. The reasons are many and depend upon the nature of the disease. The patient moves from the locality, loses interest in his case, desires to avoid fees usually incident to medical visits or consultations, or he changes physicians. Then there is the *spes phthisica,* that curious mental condition in which the patient believes that he is cured so soon as active symptoms subside.

It is well to make it a rule to discharge no patient as cured within twelve months after the disappearance of active symptoms, and I usually attempt to hold the patient under observation for twelve months more. By active symptoms I mean not only cough, raising of sputum, and hæmoptosis, nor the general phenomena usually present, as emaciation, night sweats, and fever, but symptoms dependent upon the toxæmia or reflex influences, as gastrointestinal symptoms, anæmia, amenorrhœa, etc. The order in which symptoms disappear is so variable that its discussion is practically useless.

The very nature of the healing process makes it impossible to discharge a patient upon the disappearance of physical signs or subject him to active treatment when these persist. Râles are variable and may disappear even as the disease becomes worse. Cavities filled with pus one day may be entirely empty the next. Again, all bacilli may be destroyed, though the old cavity or scar still shows an active process so far as palpation, percussion, and auscultation are concerned.

No patient should be dismissed so long as any of the following appears in the sputum: Koch's bacillus, blood, elastic tissue, albumin, or leucocytes, especially mononuclear cells. I recall one case in which no symptom had occurred for two years, except perhaps a slight cough in the cold, wet months. There was no fever, no change in weight, and practically no sputum. The Ziehl-Neelsen method showed no tubercle bacilli, but perseverance with the Mix modification in which picric acid was substituted for methylene blue demonstrated acid fast microorganisms.

In conclusion, I wish to lay emphasis upon the first statement which I made. Let the directions, to the patient dismissed, be written, since oral ones are soon forgotten.

Dr. Theodore Y. Hull, of San Antonio, Texas, says:

I believe I can best answer this question by citing an actual case in my practice. This patient was discharged February, 1908, and, according to a recent letter, is in perfect health.

Patient, male, age thirty-six years, married, and physician in active practice at onset of disease. Mother died of pulmonary tuberculosis, age twenty-eight, after two years' illness. Patient in contact with disease from eighth to tenth year, occupying same house and room with parent. He described his condition of health prior to illness as "fair." Onset attributed to "exposure and overwork." First symptom fever. Subsequent symptoms in order of occurrence, nervous irritability, loss of strength, cough and expectoration, hoarseness, and finally complete loss of voice.

At time of examination—five months after onset—patient weighed 128 pounds (twenty-two pounds below normal weight) having recently lost eight pounds. Temperature range, a. m. 97° F. to p. m. 99.3° F.; pulse, 78 to 92. Blood pressure, 118. Hæmoglobin, 80. Hoarseness existed with pain in larynx, and pain on swallowing. Cough was moderate, mostly morning. Expectoration—one half ounce daily — mucopurulent, contained tubercle bacilli, streptococci, staphylococci, influenza bacilli, and pus cells. Had small hæmorrhoids and much irritation in the neck of bladder, probably due to prostatic infection. Urine normal.

Physical signs disclosed localized infection of the left lung, upper lobe anteriorly and posteriorly, of moderate extent, and small area in right lung, upper lobe anteriorly. The second stage of the disease began with laryngeal and probable prostatic complications.

Treatment: Regulation of diet; rest, day and night in open air; bathing; and administration of tuberculin; continued for ten months.

Patient, three months after treatment, resumed practice and subsequently removed to New Mexico.

In discharging patient, I was governed by following considerations:

1. Absence of all active symptoms of disease indicating arrest of tuberculous processes.

2. Improved nutrition indicating full return of normal powers of resistance to bacterial activity.

3. Acquisition of proper habits in regard to food, fresh air, rest, and bathing.

Considering these points in detail: Symptoms, rise of temperature, and pulse practically normal for three months, nervous irritability overcome, strength returned, fatigue not easily induced, cough and expectoration absent for several months, sputum when last examined free from tubercle bacilli, laryngeal involvement corrected and irritability of bladder relieved. State of nutrition, digestion and assimilation good, hæmoglobin normal, weight increased twenty-five pounds (six months later increase reached thirty-six pounds) and general appearance of perfect physical and mental health. Proper habits, patient being a physician and fully appreciating their value, readily cooperated in their attainment.

These points—arrest of disease, corrected nutrition, and education in personal hygiene—form basis for discharge of any patient as cured of pulmonary tuberculosis in my practice. I do not consider any patient as "cured" if symptoms and physical signs persist. I regard it of utmost importance that patient regain normal weight, and do not feel safe in discharging one who has not. I consider it a most important part of treatment to fully instruct patients in kind, amount, and proper preparation of food, value of rest, mental as well as physical, necessity of fresh air at all times, importance of bathing and in what they should not do as well as what they may do; for patients who do not pay attention to details of daily life have small chance of remaining well for any extended period.

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Correspondence.

LETTER FROM LONDON.

Specialists and Specialism.—An Outbreak of Plague.

London, *November 8, 1910.*

Dr. Phineas S. Abraham delivered the opening address of the West London Medico-Chirurgical Society on the subject of Specialists and their Relationship to General Practitioners. He said that not many years ago specialists were not held in very high estimation in this country. For instance, at St. Bartholomew's Hospital, when a department for diseases of the skin was established, it was first housed in a miserable little room in the casualty building and was officered by any assistant physician or surgeon who cared to undertake its charge, and after his appointment he would generally attend at the Black Friars' Hospital for Diseases of the Skin in order to see some cases and learn something about skin diseases. Until some forty years ago most hospital surgeons considered themselves competent to perform any and every operation upon any and every organ of the body, and every physician thought himself able to treat any and every possible disease. But science had advanced so rapidly in the last few decades that in these days he would be a bold man who posed as a universal specialist or pretended to be expert in every department of medicine or surgery. It was probably as rare now for a general hospital surgeon to attempt, for instance, an iridectomy as it was for an ophthalmic surgeon to undertake an abdominal section.

The growth of genuine specialism had been gradual and was still going on. Some of the disrepute which had fallen on "specialisms" might be due to the occasional existence of what might be called the "sham specialist." A medical man suddenly determined to become a specialist. He had made no particular study and had had no extensive experience of the subject, and really knew no more about it than any other general practitioner of the neighborhood, but he formed a small special hospital, wrote or compiled a book, usually a small one, and as often as not for the public eye, and gave himself out as a "specialist." Perhaps, not knowing a word of German he spent a fortnight or so in Vienna, and we saw after his name in the *Medical Directory*, "Studied in Vienna." It was men also of this class who were more prone to lend themselves to vulgar advertisement and to ignore the ethics of our profession in other directions.

It had been said that in the near future there would be nothing but specialists, hospital physicians and surgeons, and medical men in the government services—in other words, there would be no place for the general practitioner as we know him to-day. Such a state of affairs would be not only detrimental to the profession in general, but a serious loss to the public at large. The family doctor, the medical "guide, philosopher, and friend" of the household, would always be an indispensable element in the medical world. With the more thorough education that was now at his disposal and with his daily advancing knowledge, his patients would be less likely to leave him and independently seek the advice of the consultant and specialist, as some no doubt did at present. Many practitioners avoided consultations as far as they could because after a consultation they occasionally lost their patient and saw him no more, and it was possible that certain consultants and specialists had little hesitation in quietly appropriating such patients and regarding them as their own for the future.

A rather disquieting outbreak of plague has occurred in a country village in Suffolk and has resulted in four deaths. There is, however, good reason to believe that the disease is now under effective control, as some time has elapsed since the fourth death without any further person being attacked. In all the four cases the disease was of the pneumonic type and rapidly fatal. The cause of the outbreak is being thoroughly investigated by the Local Government Board. Many rats in the district have been found to be infected with the plague, and a vigorous war is being waged against the rodents. The probability is that plague must be very prevalent among the rats in that neighborhood. Great Britain has rarely been the seat of any extensive outbreak of plague. With the exception of the Great Plague of London, the nature of which has never been definitely determined, no outbreak has occurred in this country of any magnitude. In 1901 there was an outbreak of plague in Glasgow, and a good many rats were found to be infected. It may be that this outbreak has some connection with that of 1901, as rats have been found dead from plague at considerable distances inland. Experience points to the conclusion that if rats are kept outside the house, the risk of plague infection is extremely remote, and the question of rendering the homes of the poor, rat proof by means of cement flooring must be seriously considered in future construction. A curious difference has also been observed between the rat flea in India and the rat flea in England. In India the rat flea will readily bite man, but in England it bites the human host very infrequently, a fact which probably explains the rarity of epidemics in this country.

LETTER FROM EDINBURGH.

An Edinburgh Water Scare.—The Research Defense Society.—Edinburgh University Rectorial Address.—Science Subjects in Medical Teaching.—Greenock Infirmary and an Actress.

EDINBURGH, *November 7, 1910.*

About a year ago Edinburgh was furnished with a new set of water filters, and an important report has now been presented by Dr. Ritchie and Dr. McGowan on the condition of the water supply since their installation. The section of the report dealing with the bacteriological investigation has created some alarm in the lay mind, and it has been found necessary to reassure the public through the medium of the press. The report states that, while the filters satisfactorily diminish the organic matter, they are unsatisfactory in their effect on bacteria. In a number of filtered samples the presence of *Bacillus coli* was proved, showing that something was wrong. Dr. Ritchie, however, in a letter published in the *Scotsman,* states that there is no ground for public anxiety, and that steps are being taken by the authorities to remedy the defects pointed out.

The Edinburgh Branch of the Research Defense Society met in the Queen's Hall on October 21st to listen to a lecture by Mr. Stephen Paget, F.R.C.S., on Pasteur's Life and Work. Lord Dunedin, who occupied the chair, gave an interesting account of the work done by the society in combating the tactics of the antivivisectionists. He explained that its objects were polemical in defense only, not aggressively polemical. Without such a society, scientific research was in real danger, owing to opposition, no doubt in many cases based on well intentioned ideas, but based, as he believed, a great deal upon ignorance and upon an inability to make deductions which ought to be drawn. He briefly introduced the lecturer, who gave a graphic account, illustrated with numerous lantern slides, of the life and work of Pasteur. He explained the work of the great savant in a popular manner and showed the enormous benefits reaped by humanity from his researches, benefits which could never have been obtained without the aid of animal experiment.

The address by the lord rector of Edinburgh University, the Right Hon. George Wyndham, M. P., and the usual festivities connected therewith, passed off successfully on October 28th. Mr. Wyndham, in his address, dealt with Romance in Literature. The chancellor (Mr. A. J. Balfour) and the lord rector were guests at a house luncheon given the same day in the University Union to celebrate the union's majority. A large and distinguished company was present, and Mr. Balfour, in proposing the toast of the union, spoke of its work and of the importance of social intercourse among the students. A students' torchlight procession at night concluded the proceedings.

The question of recognizing courses of pure science as taught at schools outside the university has again come forward. It will be remembered that in a previous letter reference was made to the possible recognition of such teaching as part of the medical curriculum, in place of the university science classes. The proposal was made in the Draft Ordinance for the Regulation of Degrees in Medicine presented recently to the Edinburgh University Council. Professor Schäfer supported the recommendation, saying that not to recognize outside teaching would be unjust to a great many students and to the great public schools, which were doing their utmost to encourage the teaching and study of science. Principal Laurie objected to the proposal, saying that if they allowed a subject so fundamental as chemistry to drop out of the medical curriculum, and if they left it in the hands of the schools, no matter how well the schools might do the work, they were making a retrograde step. On a division, however, the Draft Ordinance was approved as it stands, that is to say, outside courses are to be recognized.

A somewhat curious case has come before the Court of Session in Edinburgh in which an actress sues the directors of the Greenock Infirmary for payment of £1,000 damages. The pursuer supported herself by teaching dancing and by acting as a subject for cinematograph pictures. On February 19th last she broke the lower part of her thigh bone. She became a paying patient in the infirmary, where she says she was treated for a sprain of the knee joint following by synovitis. She left the infirmary on March 21st, the defenders' surgeons having, she states, said that she might leave. On her return to London her leg was examined and the fracture of the thigh bone was found. The bone had been allowed by the defenders' surgeons to unite without, the pursuer says, being set, with the result of making the leg markedly shorter than the other leg. She has had to give up contracts in which she was engaged as an actress, and is also unable to teach dancing or to appear as a subject for pictures. She complains of the negligent and unskilful treatment of the infirmary doctors and surgeons, who ought, she says, to have discovered the fracture and treated it properly. The defenders deny liability, and explain that the pursuer left the infirmary contrary to the advice of the infirmary doctors, who were of opinion that she had not sufficiently recovered. They deny that the pursuer was unskilfully treated. It will be interesting to see how the case is decided.

Therapeutical Notes.

Drug Therapy in Tuberculosis.—Rau, in *Folia Therapeutica,* remarks that there is no disease which the physician is called upon to treat in which so many and varied methods of treatment are adopted as in tuberculosis. This is due to the variety of symptoms exhibited by the patient, and also to the long continued and often hopeless progress of the disease. Nothing has done so much harm in the fight against tuberculosis as the indiscriminate and routine administration of drugs in the early stages, thus wasting a lot of valuable time in which the patient should be carrying out hygienic and climatic treatment. No special drug with which the author is acquainted has any specific effect in the treatment of tuberculosis, excepting of course tuberculin, which in his opinion will soon take a large place in the treatment of the disease in all its protean forms.

In the routine treatment of a case of pulmonary tuberculosis, whether in a sanatorium or at home, the physician has recourse to a general line of treatment quite regardless of special symptoms. A great many preparations of cod liver oil and easily digested fats possess great advantages for pulmonary cases. It is better not to give them in summer or when the patient has much fever, but in general they represent a large amount of fats which are ingested without much trouble, and are highly nourishing.

Creosote is a valuable drug when it suits the patient. In a great many instances where there is fermentative diarrhœa, flatulence and loss of appetite, and indigestion, creosote seems to be of wonderful benefit. It ought to be given in small doses, not exceeding two minims, in capsules. Large doses upset digestion, and cause a loathing for food, and in such cases the drug should not be continued.

Strychnine is a valuable drug, as a general stimulant. Under its influence the general functional activities and the appetite are often stimulated. Some physicians prescribe large doses such as 1 grain per diem, but 1/30th of a grain three times a day is quite sufficient, and the larger doses are to be condemned.

Arsenic is often of great value in the general management of a feeble patient with anæmia. It should be given in small doses, say one minim of Fowler's solution, gradually increasing to a maximum dose of five minims. If any nausea or loss of appetite follows the drug should be stopped.

Every case of hæmoptysis should be looked upon as serious until it has quite stopped. The two drugs which he uses are:

Morphine and amyl nitrite.—A small hypodermic injection of morphine has the effect of relieving the cough, slowing the respiration, and calming nervous excitability. Nitrite of amyl has been largely recommended, and in many instances seems to have quite a specific effect, especially in early cases. It is given in the form of a capsule and inhaled. If bronchopneumonia should supervene on hæmorrhage it is important to stop either morphine or amyl nitrite.

The syrup of hydriodic acid given three or four times a day often exerts a valuable influence in diminishing cough and promoting easy expectoration. Where relief cannot be afforded by these measures codeine and heroin are useful. Two grains and a half of terpine hydrate, combined with ½ grain of codeine, is often beneficial. Syrups are not to be recommended on account of their effect on digestion.

Nothing exhausts a patient so much as a severe night sweat, and the endeavor to prevent them ought to be made if possible.

In addition to ordinary hygienic measures the body should be sponged two or three times daily with diluted acetic acid or vinegar. Camphoric acid, in doses of from fifteen or twenty grains, seems to have the best effect in restraining perspiration. Picrotoxin, 1/100 to 1/50 of a grain, and agaracin, 1/12 of a grain, also act well. Very often our final resource is atropine, 1/100 to 1/50 of a grain, but this remedy should be deferred as long as possible on account of its action on digestion.

Tuberculin in its various forms is now playing a most important part in the treatment of the various manifestations of tuberculosis.

Bovine tuberculin, or tuberculin prepared from bovine cultures, is specially recommended for cases of early pulmonary tuberculosis. The dose should commence with 0.0001 milligramme, and increase by twelve weekly injections, to a maximum dose of 0.01 milligramme.

Human tuberculin, Koch T.R., is prepared from human cultures, and is recommended for the treatment of tuberculosis, peritonitis, enlarged glands, joints, lupus, etc., the dosage being the same as with bovine tuberculin. In early cases of phthisis tuberculin has a splendid effect if combined with open air treatment; while even in advanced cases it sometimes is beneficial.

The tuberculin should only be injected with the strictest aseptic precautions and under the supervision of a specialist in vaccine and bacteriological work.

The Treatment of Prostatitis.—Schaffner (*Merck's Archives,* November, 1910) regards the treatment of the catarrhal form of prostatitis as really that of posterior urethritis and he prescribes daily intravesical irrigations of solution of potassium permanganate in the strength of 1 in 5,000, gradually increased in strength to 1 in 2,000. After four or five days he commences using solutions of silver nitrate in the strength of 1 in 2,000, having his patients visit his office every third day, using potassium permanganate one day and the silver solution at the next visit, and so continue to alternate. Internally he prescribes oil of santal in capsules each containing ten minims, and directs them to be taken not oftener than one every two hours. A combination which has given good results in his hands is the following:

℞	Mass of copaiba,	gr. ii;
	Oil of santal,	♏ii;
	Potassium bicarbonate,	gr. iv;
	Extract of kava kava,	gr. ii;
	Atropine sulphate,	gr. 1/250.

M. ft. Pil. No. 1. Sig.: One pill every two hours.

After the urgency of urination has subsided, the internal treatment may be discontinued and dependence placed on the local treatment.

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ANDREAS VESALIUS.

The Renaissance, the revival of learning, the revolution in thought, conduct, creed, and conditions of existence, began after the Dark Ages in northern Italy and grew rapidly. As its first representative we may consider Dante (1265 to 1321). Under Lorenzo de' Medici il Magnifico (1449 to 1492) the Renaissance reached its highest development. The Italian nation degenerated into an intellectual and sensual state which involved even the popes. Scholars and rich men alike vied with one another in returning to those pursuits, habits, and methods of thought which had ruled ancient Rome in her most corrupt days. But the downfall came in 1527, when Charles V captured and sacked Rome during his war with Pope Clement VII. The Spaniards, the Inquisition, and the changed policy of the Church ended the Renaissance in Italy, from whence it was transferred to France, the Netherlands, Germany, and England.

During the time of the awakening of art and literature there also appeared a revival in medicine. The Galenic era (the Greek physician Galen was born A. D. 131 and died about 201 in Rome, where he had been court physician, enjoying an enormous practice) was followed in medicine by the long period of the Dark Ages. The only place for medical lore in Europe was the University of Salerno, in southern Italy, whither it was brought by the Arabs; and here anatomy was taught by the dissection of a pig. The German Emperor, Frederick II, as king of Sicily, decreed in 1231 that a human body should be dissected at the Salernian school at least once in five years. In 1308 the great council at Venice permitted the medical school of its town the dissection of a human body once a year. In 1315 Mondino dissected a human body at the University of Bologna, and through his teachings became the restorer of anatomy. But his works did not contain any new facts, for they were compiled largely from the works of Galen and Avicenna. For over two hundred years anatomists used Mondino's work. When the Renaissance came to such an abrupt end in Italy we find Bartholomæus Eustachius (1520 to 1574) and Gabriel Falloppius (1523 to 1562) in Italy; Charles Estienne (Carlos Stephanus, died in 1564) in France; Johannes Dryander (1500 to 1560) in Germany; and Andreas Vesalius (1514 to 1564) in the Netherlands. All these anatomists had emancipated themselves from Galen, the greatest among them being Vesalius.

Dr. James Moores Ball gives us in an *édition de luxe* (St. Louis: Medical Science Press, 1910) a very interesting study of the life of this great anatomist. Born in Brussels on December 31, 1514, Vesalius came of a medical family the members of which, since his great-great-grandfather, Peter Vesalius, had been court physicians and teachers of anatomy. His father was apothecary to Charles V, and his influence was of great help to Andreas. Little is known of Andreas's youth. He studied medicine in Louvain, Paris, and Padua, where, in 1537, he received the degree of doctor of medicine and, in the same year, became professor of surgery and anatomy. There he wrote his great work *De Humani corporis fabrica*, which appeared in 1543 in Basel; upon the seven books and the epitome rests Vesalius's fame as an anatomist. Dr. Ball gives us a very good résumé of the contents, accompanied by illustrations copied from the original. For his views expressed there, Vesalius was violently attacked by his contemporaries. Tired of the disputes, he left Padua and, entering, in 1544, the service of Charles V as a court surgeon, settled in Madrid. Thus ended his career as a scientist. He remained a court physician for over twenty years, holding the position also under Charles V's successor, Philip II. But suddenly, in 1564, in the height of his success, he resigned and left Madrid. The reason for this move has never become known. He went to Jerusalem by way of Italy, and on his return voyage, having been called to Padua to fill the chair made vacant by the death of Falloppius, he was shipwrecked upon the island of Zaknythus, where he died of exhaustion on October 15, 1564. Dr. Ball, whose beautiful work we have cited, thus brings back to us the life of one of our foremost anatomists.

A COMPREHENSIVE PROVISION OF LABORATORIES.

In East Forty-first Street there is approaching completion a building which seems destined to be of great advantage to persons engaged in laboratory work. It is erected on a piece of ground fifty-six feet wide and a hundred feet deep situated in convenient proximity to the Grand Central railway station, the subway stations, present and prospective, at Forty-second Street and Fourth Avenue, the Academy of Medicine, the New York Public Library, and the Engineering Society's building. It is a ten story fireproof structure provided with all the appliances for lighting, ventilating, heating, and refrigerating that are to be found even in university laboratories. It has been built by the Chemists' Building Company, an organization designed to promote the interests of chemical science and industry.

The five lower stories have been leased to the Chemists' Club, which is to furnish all the usual appurtenances of a social club and fit up a large room for scientific meetings, a chemical library, a chemical museum, and apartments for out of town attendants at the meetings held in the auditorium, which will be the natural place for assemblages of persons interested in scientific and industrial chemistry and allied pursuits. The five upper stories are intended and specially constructed for laboratory purposes, to be rented in entire floors or partitioned to suit tenants. It is intended to charge low rentals and to facilitate in every way the prosecution of scientific and industrial investigation. The laboratories will be devoted to analytical, commercial, and research chemistry, electrochemistry, physics, bacteriology, etc., but will not be rented as manufacturing laboratories. It is expected that many of the tenants' expenses of operation may be materially reduced by the cooperative installation of costly apparatus.

We congratulate the Chemists' Club on this acquisition of suitable quarters for itself, and we congratulate the future occupants of the laboratories on the excellent facilities which they will doubtless find in the new building. The cooperative idea might well be more largely acted upon by professional workers than it has been heretofore, especially in New York. The chemists' new building, we can well imagine, is destined to become a favorite resort for physicians, much of whose work is closely connected with chemistry, and it would not be strange if practitioners of medicine took laboratories among the chemists. Many a physician who does not seek to be known as a laboratory man yet finds it desirable to prosecute investigations which may be carried on more advantageously in a properly equipped laboratory than elsewhere. Examples of such work will readily occur to many of our readers.

THE IMPORTANCE OF INFANT MORTALITY.

During the past few years the medical profession and the general public have alike become aroused to a sense of the menace implied by the high rate of infant mortality which prevails in all civilized countries. In most if not in all of these countries a high infant mortality has been accompanied by a remarkable diminution of the birth rate. The higher the grade of civilization to which a nation has attained, or the greater the height of prosperity it has reached, the lower falls the birth rate. In fact, the degree of prosperity and culture of a country may be fairly gauged by its birth rate. For example, France, which is one of the richest and most cultured countries of the world, has the lowest birth rate. Great Britain is fast following in the same direction as regards the number of children born, while native born Americans have almost invariably very small families. As Germany has increased in wealth so has her birth rate declined, and the same is true of other countries to a greater or less extent.

Dr. Arthur Newsholme, one of the best known British authorities on sanitary science, contributed to the Sanitary Congress recently held in Brighton, England, an instructive paper dealing with the matter of infant mortality. He acknowledges that the falling birth rate is a question of voluntary reduction, but at the same time confesses that he sees no remedy for this state of affairs, although he does allow that a low death rate cannot continue to compensate for a steadily declining birth rate.

However, it is obvious that, as fewer children are being born in the majority of civilized communities each year, the essential point is to rear such children in health. The most disquieting feature of the present situation is that the unfit are propagating the human species at a considerably more rapid rate than the physically and mentally able members of the population. Consequently some persons contend that it is better for the race, as a whole, that children of inferior stock should die. According to Newsholme, this is false reasoning as well as contrary to the moral law. Insanitary conditions harmfully influence not only infant mortality, but general mortality up to twenty years of age. The same environment which causes a high mortality among infants continues its maleficent work more or less throughout life.

It would be superfluous to emphasize the truth that the first five or six years of life are the most important for laying the foundation of a healthy after life. There are, then, two outstanding reasons why concentration on the problem of infant mortality should be intensified—first, because, in order to rear a healthy race, it is absolutely necessary that the first few years of life should be passed under healthful conditions; second, because of the rapidly declining birth rate.

It has been clearly brought out by the investigations which have been going on in England that there is a very close relationship between infant mortality and sanitary defects. Diarrhœa is the most deadly disease of infants, and the correlation between this affection and insanitation is unmistakable. Urban life is most fatal to young children, for the reason that there is more overcrowding in cities and frequently there are more insanitary arrangements, but when the living houses of the poor in cities are carefully erected with due regard to space, light, ventilation, and general sanitation the death rate of infants is always greatly reduced, and this has been verified times without number. Thus a great deal of the high infant mortality, concerning which so much is written and said, comes well within the range of preventive medicine. Of course, there are various other causes which enter into the question of infant mortality, such as improper feeding, shiftlessness, and uncleanly habits on the part of the mother, but there can be little doubt that bad housing is one of the chief causes of the deplorably high infant mortality which prevails in Europe and in America.

DIPHTHERIA GERM CARRIERS.

In the *Bulletin de l'Institut Pasteur* for August 30th, Sacquépée considers the question of the carriers of diphtheritic germs, and the conclusions at which he arrives have certainly their importance. The large majority of pseudodiphtheritic organisms formerly considered as quite different from Loeffler's bacillus in reality belong to the species of *Bacillus diphtheriæ* and possess certain of its biological properties, but they are pathogenic so far as man is concerned only under exceptionally favorable conditions.

The number of carriers of pseudodiphtheritic bacilli is very great, the organism being present in the throat and especially in the nasal fossæ, possibly increased in virulence by successive passages from one individual to another. There exist what may be called latent carriers, who conceal the bacillus for a certain time before they show the clinical evidences of diphtheria; they may be dangerous, during the first phase, to the same extent as healthy carriers, so long as the diphtheria has not made itself evident. "Healthy carriers" are subjects infested by the bacillus without being at any time stricken with the disease. These subjects are relatively frequent in regions where the affection prevails in an epidemic state. These healthy carriers are frequently met with in schools, hospitals, and barracks.

The survival of the bacillus in healthy subjects is usually short, and it is hardly if at all influenced by the various treatments that have been tried. The ætiological part played by healthy carriers is at present difficult to assign, but on many occasions their danger has been made evident. The persistence of the presence of the bacillus following convalescence varies from one to four months, and it has even been found from ten to twenty-two months after the recovery from the affection. The most varied therapeutic measures have been employed. Local antiseptic applications have given only uncertain results, while the vaccines and antitoxic sera apparently have no effect in the destruction of the bacilli. Sacquépée believes that patients having suffered from diphtheria should not be allowed to mingle with others until after the disappearance of the bacilli has been proved.

EHRLICH AND *JUGEND*.

A German comic paper known as *Jugend* recently announced that in its issue for November 19th it would publish a colored portrait of Professor Paul Ehrlich from a painting made especially for the paper by Franz Wilhelm Voigt and pronounced by members of the professor's laboratory staff and by other friends of Ehrlich's to be the best possible likeness. We can hardly suppose that the announcement was jocose, so we presume the portrait may be expected to appear. *Jugend's* past achievements promise that the picture will be a good one; however, colored illustration is still in the experimental stage, and the final appearance of an example, no matter how excellent the original may have been, it is not easy to foretell. We hope that Professor Ehrlich will have every reason to be satisfied with *Jugend's* effort in this instance, but we cannot conceal from ourselves the possibility that he will find himself in a state of mind like that of the dying soldier who sought to relieve his feelings by exclaiming "I'll never love another country!"

News Items.

Changes of Address.—Dr. William Lathrop Love, to 857 Lincoln Place, Brooklyn, N. Y

A Concert in Aid of St. Mark's Hospital, New York, will be given in Carnegie Hall, Saturday evening, November 26th.

Dr. Dandridge's Successor.—Dr. C. L. Bonifield has been named as successor to Dr. N. P. Dandridge on the board of medical directors of the Cincinnati City Hospital.

Nurses' Home Dedicated.—The new home for nurses at the Jewish Hospital, Brooklyn, was dedicated on November 6th, with suitable ceremonies. The building is said to be well equipped with all modern conveniences and to be complete in every detail.

The Petersburg, Va., Medical Society met in annual session on November 17th and elected the following officers for the coming year: President, Dr. W. P. Hoy; vice-presidents, Dr. J. R. Beckwith and Dr. R. S. Gamble; corresponding secretary, Dr. H. A. Burke; secretary and treasurer, Dr. W. C. Powell.

Dr. Millican Leaves for England.—At the invitation of the *Lancet,* of London, Dr. Kenneth W. Millican sailed for England on November 24th, to take a position on its editorial staff. He tells us that he has tried to write to all his friends, but the list still remains so long that he has been compelled to abandon the idea.

The Kentucky Medical Association.—The Eastern auxiliary of the association met in annual session in Maysville, Ky., on November 17th, and elected the following officers: President, Dr. D. E. Morgan, of Maysville; vice-president, Dr. J. M. Wells,, of Vanceburg; secretary and treasurer, Dr. M. S. Meadows, of Fullerton.

Object to Site of Tuberculosis Sanatorium.—A committee composed of representative business men of Saratoga Springs will appear before the State Board of Health on December 2d, to formally protest against the approval of Mt. McGregor as a site for the proposed tuberculosis sanatorium of the Metropolitan Insurance Company.

Smallpox Among Arapahoe Indians.—It is reported that ninety-three Indians on the Arapahoe Indian reservation in Wyoming died from smallpox during the four days preceding November 18th. The disease is manifested in its most malignant form and so far the officers in charge have had little success in checking the spread of the epidemic.

Extension of Time for the Cash and Howe Prize Competition.—Dr. A. Jacobi, chairman of the Committee on Prize Essays of the Medical Society of the State of New York, announces that the date for the presentation of prize essays in competition for the Merritt H. Cash Prize and the Lucien Howe Prize has been extended from December 1, 1910, to March 1, 1911.

The Holyoke, Mass., Medical Association held a regular meeting on Tuesday evening, November 8th. Dr. Thomas E. Cavanaugh resigned as president, and Dr. George D. Henderson was elected to fill the vacancy. Dr. Charles L. Taylor read a paper entitled Economic and Therapeutic Dietetics, which was followed by a general discussion.

Cholera at Quebec.—An official report submitted to the Dominion Government Immigration Department states that the case of Peter Spencer, a passenger on the steamer *Royal George,* which arrived at Quebec last week is undoubtedly cholera. The patient, with all the rest of the steerage passengers, is detained at Grosse Island Quarantine, about thirty miles below Quebec.

The Medical Society of the County of New York.—The one hundred and fifth annual meeting of this society will be held in Hosack Hall, New York Academy of Medicine, on Monday, November 28th, at 8 p. m. The programme arranged for the scientific session will include the following papers: The Diagnosis of Surgical Diseases of the Stomach and Biliary Passages, by Dr. Charles N. Dowd; Surgery of the Biliary Passages, by Dr. Alexander B. Johnson; Hematogenous Infections of the Kidney, by Dr. George Emerson Brewer. The discussion will be opened by Dr. Charles H. Peck. The date of the December meeting has been changed to Tuesday, the 27th.

A "Symposium" on the Pathology of the Thyreoid Gland constituted the programme at a meeting of the Section in Pathology of the Buffalo Academy of Medicine, held on Tuesday evening, November 22d. Dr. Harvey R. Gaylord read a paper entitled Goître in Fish and the Relation of Goître to Water. Dr. S. P. Beebe, professor of experimental therapeutics, Cornell University Medical College, read a paper on the clinical pathology and therapy of the thyreoid gland.

Rochester, N. Y., Academy of Medicine.—At a regular meeting of this organization, held on Wednesday evening, November 9th, the programme, which had been arranged by Section II, included the following papers: Drainage of the gallbladder high up under the costal arch, by Dr. F. W. Zimmer; Operations during Pregnancy, by Dr. John F. W. Whitbeck; Report of Operative Cases of Gallbladder Infection Following Typhoid Fever, by Dr. E. W. Mulligan. Dr. E. Wood Ruggles is secretary of this section and Dr. Willis E. Bowen, is chairman.

Society Meetings for the Coming Week:

Monday, *November 28th.*—Medical Society of the County of New York (annual).

Thursday, *December 1st.*—New York Academy of Medicine; Dansville, N. Y., Medical Association.

Friday, *December 2d.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society of New York.

Typhoid Fever at Annapolis.—Two new cases of typhoid fever were reported at the Naval Academy on November 20th, bringing the total number of cases reported up to twenty. The situation is said to be quite serious, though at present the condition of none of the affected midshipmen was said to be critical. The medical officers who have been investigating the origin of the outbreak are of the opinion that it must be attributed to a temporary supply of milk secured at a time when the regular dairyman could not bring the full supply that was needed.

The Aid Association of the Philadelphia County Medical Society.—At the annual meeting of this society, held on November 13th, the following officers were elected: President, Dr. Roland G. Curtin; vice-president, Dr. J. R. Shellenberger; treasurer, Dr. John B. Turner; secretary, Dr. Lewis H. Adler, Jr.; directors, Dr. Oscar H. Allis, Dr. John C. Da Costa, and Dr. Richard A. Cleemann. In addition to these, new directors were chosen to fill the places of the late Dr. De Forest Willard and Dr. J. C. Walker. These were Dr. Samuel D. Risley and Dr. William S. Wray.

The Gaynor Hospital Fund.—Announcement is made by the chairman of the committee in charge of the matter that the fund which is being raised by the friends of Mayor Gaynor as a gift to St. Mary's Hospital, Hoboken, is now in the neighborhood of $10,000. The amount of individual subscriptions is limited to $100 each, but the fund is made up principally of small contributions, and almost all of them are accompanied by letters of appreciation of the opportunity to participate in the purposes of the committee. Contributions are still coming in at the rate of about $1,000 a day.

The Bronx Medical Association held a regular meeting on Friday evening, November 25th. The subject discussed was indicanuria. Dr. Connellan read a paper on the ætiology, symptoms, and treatment, with a demonstration of a test, which was followed by a general discussion. The present officers of the society are: President, Dr. William A. Boyd; first vice-president, Dr. S. F. Corbett; second vice-president, Dr. E. F. Brennan; recording secretary, Dr. B. S. Bickelhaupt; corresponding secretary, Dr. Vincent E. Quin; financial secretary, Dr. J. J. Burns; treasurer, Dr. Carl Wurm.

The Medical Society of the County of Clinton, N. Y., met in annual session in Plattsburg, on Tuesday, November 15th. Owing to the absence of the president, Dr. E. A. Barnes, on account of illness, Dr. T. J. Cummins, vice-president of the society, presided. There was a large attendance. An interesting feature of the programme was a paper on serum and vaccine therapy by Dr. Bingham H. Stone, of the Vermont State Department of Health. The following officers were elected: President, Dr. J. H. La Rocque; vice-president, Dr. M. D. Briggs, of Champlain; secretary, Dr. T. A. Rogers; treasurer, Dr. J. G. McKinney.

Vital Statistics of New York.— During the week ending November 12, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,334, corresponding to an annual death rate of 14.49 in a thousand of population, as compared with a rate of 15.87 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.42; the Bronx, 14.01; Brooklyn, 14.82; Queens, 13.92; Richmond, 14.46. The deaths of children under five years of age numbered 324, of whom 232 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 66; over five years of age, 75. There were 11 deaths from suicide, 9 from homicide and 64 due to accidents.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 19, 1910:

	November 12th.		November 19th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	573	163	495	155
Diphtheria and croup	312	30	273	18
Measles	106	5	117	1
Scarlet fever	134	3	136	6
Smallpox	..	..	..	..
Varicella	69	..	83	..
Typhoid fever	133	26	135	15
Whooping cough	54	3	22	2
Cerebrospinal meningitis	2	2	2	2
Total	1,383	232	1,263	199

The Cost of Radium.—In a lecture delivered in London on October 3d, Sir William Ramsay is reported to have said that radium now costs $2,100,000 an ounce. This price is slightly less than it was a year ago, when it was said that the value of the substance was $2,500,000 an ounce. That was at the rate of $90 a milligramme. Not so long ago radium had been obtainable for $2 a milligramme. Last January the price was said to be $3,000,000 an ounce. A year ago there was about a quarter of a pound of radium in the world. The quantity now is not much greater. As a matter of fact, literally pure radium has been produced only recently. On September 5th last Madame Curie told the Academy of Sciences in Paris that she had at last succeeded in obtaining pure radium. A radium bank has existed for some time in Paris. Last January one was established in London, and similar institutions are to be founded in other great cities. These banks loan the precious substance to scientists and physicians. The cost is enormous. As much as $200 has been charged for the use of 100 milligrammes for a single day.

Gifts and Bequests to Charity.—By the will of Hugh T. Inman, the Atlanta capitalist who died in New York recently, the city of Atlanta will receive $50,000, the interest on which to be used in municipal charitable work. The will also contains other bequests to charitable institutions amounting to about $50,000.

An estate valued at $2,700 is devised to charity in the will of John Porter, who died in the Philadelphia General Hospital. The will gives $500 each to St. Joseph's Home for Homeless Industrial Boys; St. Vincent's Home, and the Catholic Home for Destitute Children. Several bequests of a private nature are made and the residue is given to the Home for the Aged which is under the supervision of the Little Sisters of the Poor.

Mrs. James C. Jordan, of San Francisco, has presented to New Brunswick, Canada, the country estate of her late husband, for a tuberculosis hospital. The estate, which is valued at $30,000, is situated at Riverglade, Moncton, N. B.

By the will of Robert Steele, who died in Philadelphia on October 24th, the bulk of an estate amounting to over $20,000 is left in trust, the income to go to the widow, Amelia Steele, during her life. Upon her death $5,000 of the principal will go to the Presbyterian Hospital, to establish a free bed in that institution, and $3,000 to the Presbyterian Home for Widows and Single Women.

Mr. Pierpont Morgan has given $40,000 for the erection of an isolation pavilion for tuberculosis patients, in connection with the Municipal Hospital at Aix-les-Bains, France. The pavilion will accommodate twenty-two patients and will be entirely free. It will be modeled after the isolation wards on the roof of the Lying-in Hospital, New York.

New England Alumni Association of the Jefferson Medical College.—Members from all parts of New England met in Boston on Monday, November 14th, to attend the fall meeting and annual dinner of the New England association of graduates of Jefferson Medical College, of Philadelphia. Dr. John T. Farrell, of Providence, R. I., president of the association, was toastmaster, and among the speakers were the Hon. Walter A. Ballantyne, president of the Boston city council; Dr. John E. Donley, of Providence; Dr. Alfred Worcester, of Waltham, Mass.; Dr. John C. Berry, of Worcester; Dr. John F. Fennessey, of Dorchester, and Dr. Fred J. Bailey, of Dorchester. The officers of the association are: Dr. John T. Farrell, '86, of Providence, president; Dr. John C. Berry, '72, of Worcester, vice-president; Dr. Angus MacOdrum, '00, of Cambridge, secretary; Dr. Whitefield N. Thompson, '89, of Hartford, Conn., treasurer.

The Health of Philadelphia.—During the week ending November 5, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid Fever, 30 cases, 4 deaths; scarlet fever, 29 cases, 0 deaths; chickenpox, 14 cases, 0 deaths; diphtheria, 96 cases, 10 deaths; measles, 29 cases, 1 death; Whooping cough, 20 cases, 3 deaths; pulmonary tuberculosis, 136 cases, 41 deaths; pneumonia, 15 cases, 34 deaths; erysipelas, 2 cases, 0 deaths; mumps, 6 cases, 0 deaths; infantile paralysis, 4 cases, 0 deaths; trachoma, 1 case, 0 deaths; anthrax, 1 case, 0 deaths; tetanus, 1 case, 1 death. There were 5 deaths from tuberculosis other than that of the lungs, 20 from diarrhœal diseases under two years of age, 4 from puerperal fever, and 1 from cholera morbus. There were 36 stillbirths: 17 males and 19 females. The deaths of children under five years of age numbered 97, of whom 68 were under one year of age. The deaths from all causes, exclusive of stillbirths, numbered 435, in an estimated population of 1,598,400, corresponding to an annual death rate of 14.15 in a thousand of population.

The Health of Chicago.—During the week ending November 12, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 85 cases, 11 deaths; measles, 25 cases, 1 death; whooping cough, 9 cases, 0 deaths; scarlet fever, 136 cases, 7 deaths; diphtheria, 219 cases, 31 deaths; chickenpox, 38 cases, 0 deaths; tuberculosis, 159 cases, 64 deaths; pneumonia, 47 cases, 83 deaths; infantile paralysis, 2 cases, 0 deaths. There were 22 cases of contagious diseases of minor importance reported, making the total 742, as compared with 627 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 39, and there were 25 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 158, of whom 104 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 562, corresponding to an annual death rate of 13.4 in a thousand of population, as compared with a rate of 13.7 for the preceding week and 14.4 for the corresponding period last year.

Lectures on Spirit and Drug Neurosis.—Dr. T. D. Crothers, of Hartford, Conn., will deliver a series of lectures on alcohol and drug addiction in the American Medical College, of St. Louis, Mo., on November 30th and December 1st, 2d, and 3d. The topics of the lectures are as follows:

Lecture 1. The medical side of the alcoholic problem: its relation to disease; some conclusions of science from laboratory and clinical experience, and their practical relation to medical work.

Lecture 2. The neurosis and psychosis of these diseases, their symptomology, pathology, diagnosis, and relation to every day practice.

Lecture 3. The question of treatment; home, office and sanatorium care; remedies and possibilities of cure and restoration; clinical teachings and examples.

Lecture 4. Drug addictions; extent and complications, and their relation to general practice; general causes and symptomology; morphinism, its diagnosis and treatment.

Lecture 5. Other drug addictions; cocainism, its fascination and prevalence; other drugs that are used, their general symptomology, diagnosis, and treatment; conclusions.

Public Provision for Consumptives Doubled.—Sixteen State sanatoria, twenty-eight county hospitals, and twenty-one municipal hospitals for tuberculosis have been erected and provided for since January 1, 1909, says a bulletin of the National Association for the Study and Prevention of Tuberculosis. Within the last two years the number of State institutions for tuberculosis has doubled, and the number of county and municipal institutions has increased from about thirty to eighty The expenditure of public money for the treatment of tuberculosis also has more than doubled. Not less than $3,000,000 of State money was appropriated for tuberculosis institutions in 1909, when forty-three legislatures met, and over $600,000 in 1910, when only eleven legislatures were in session. The appropriations of counties and cities for tuberculosis hospitals and sanatoria in the last two years will aggregate fully $2,500,000, bringing the total of official appropriations for tuberculosis hospitals up to over $6,000,000 in the past two years. In spite, however, of this good showing, the National Association for the Study and Prevention of Tuberculosis states that not one tenth of the public provision for tuberculosis that is needed has been made. More than 250,000 tuberculosis patients are constantly without proper institutional treatment.

New Buildings for the University of Copenhagen.—On August 18th the new buildings for the hospital and four departments of the University of Copenhagen were opened. The new buildings, forty in number, are situated in a northern suburb, and the cost of construction was ten million Danish crowns. Near the entrance to the hospital is the great Finsen memorial. In addition to the new hospital buildings there are new quarters for all the departments of the university, except two. There are new buildings for the departments of pathology and anatomy, legal medicine, general pathology, and pharmacology. The old Royal Frederik's Hospital had been in use since 1757. The new hospital consists of two medical departments, two surgical, one dermatological, one ophthalmological, one otolaryngological, one pædiatric, two obstetrical, and one gynæcological, and has accommodations for 969 patients. The medical and surgical departments each consist of four pavilions, connected by a protective wall. In addition to these various departments there are laboratories, operating rooms, lecture halls, baths, six dispensaries, building for nurses, a laundry, a kitchen, an administrative building a centrally located steam supplying building, a church, and eight villas for homes for the professors. The clinics and the institutions of the Royal Danish Hospital are combined in one great building complex, with the exception of the institution for anatomy and physiology and the psychiatric ward, which are still located in the so called Surgical Academy Building.

The Second International Conference for the Study of Cancer was held in Paris, October 1 to 5, 1910. The minister of public instruction presided and made an address at the opening session. Other addresses were made by the president of the conference, the dean of the faculty of medicine, the president of the French society for the study of cancer, and the delegates from foreign countries, twenty-three of the leading countries of the world being officially represented. The papers and discussions related almost exclusively to the disease as it occurs in man, the subject being discussed under six heads, as follows: Histology and histological diagnosis, statistics, clinical diagnosis, therapeutics, ætiology and experimental pathogenesis, and comparative pathology. One point that was emphasized was the need of a uniform international classification and nomenclature of cancer based upon histology, and a committee was appointed to report on the subject at the next conference. Some striking statistics on the extent of cancer were presented, the reports showing that the mortality from this disease in some places being almost as high as that from tuberculosis. The death rate from cancer of the stomach was said to be especially high in the United States. Much time was devoted to the laboratory diagnosis and the treatment of cancer. Very complete reports were presented on the diagnosis of cancer by examination of the blood, and the various methods of treatment proposed were critically examined. The conference was held under the auspices of the French association for the study of cancer. Dr. Reid Hunt, of the United States Public Health and Marine Hospital Service, was one of the official delegates from the United States to the conference.

The Foresters' Tuberculosis Sanatorium.—The tuberculosis sanatorium erected by the Independent Order of Foresters in the Adirondack Mountains has just been completed. This institution, which has been established by the order for the care of any of its members stricken with tuberculosis in its incipient form, has been pronounced by the State Board of Health to be one of the most complete and thoroughly equipped in the State. It is situated at Rainbow Lake, a few miles from Paul Smith's. The site comprises six hundred acres of mountain land at an elevation of about 2,000 feet above sea level. The present buildings furnish accommodations for about one hundred and fifty patients and additional accommodations will be provided as requirements demand.

The New Chemists' Building.—The ten story fireproof building, which is being erected by the Chemists' Building Company, at 50-54 East Forty-first Street, at a cost of $500,000, is nearing completion. The lower half of this building has been leased to the Chemists' Club and is fitted up with all the appurtenances of a social club, together with a large auditorium for scientific meetings and ample space for a complete chemical library and museum. The five upper stories are devoted to laboratory purposes, and can be rented as entire floors or in suitable subdivisions, to research chemists, bacteriologists, etc., but are not to be used as manufacturing laboratories. They are provided with ventilating flues, water, gas, and electric mains, steam and compressed air lines, in suitable locations, but the tenants are expected to make their own connections and provide their own fixtures. Rental will include free janitor and elevator service, heat, and electricity for lighting purposes. It is the intention of the company to charge low rentals for these laboratories, and in many ways to facilitate the prosecution of scientific and industrial research. Next door to the building is the new building for physicians and dentists, and the attention of physicians and pathologists is called to the advantages which the laboratories of the Chemists' Building could afford them for their researches. Until February 1, 1911, communications should be addressed to Dr. Morris Loeb, president, 106 West Fifty-fifth Street; after that date, Dr. Loeb's office will be in the building, 50 East Forty-first Street.

Resolutions on the Death of Dr. Ransom.—The medical board of the City Hospital, of New York, mourns the death of one of its former members, Dr. Charles C. Ransom. During the fifteen years that he served the sick poor in the wards of this hospital, his colleagues learned to know him and to love him. His personality united, in a rare degree, scientific enthusiasm, genuine humanitarianism, and love of his fellow men. For a number of years he had interested himself especially in the welfare of the many sufferers from chronic joint disease who fill our wards, too often a mute, but eloquent reproach to the boasted triumphs of modern medicine. Through careful study and painstaking perserverance with the individual, Dr. Ransom accomplished wonderful results in the alleviation of this group of patients. When holding important office for the medical board, and equally when merely one of its members, Dr. Ransom took the responsibilities of his position seriously. To him we owe the first steps which were taken toward proper living conditions for the house staff, and throughout his whole career Dr. Ransom was generously and whole heartedly devoted to the welfare of the medical men who served under him, loyal to the hospital and all its interests, eager for its betterment and always hopeful of seeing it realize the high ideals he cherished for it. It is with the realization of personal loss on the part of each of us that we meet here to-day to place formally upon our records our last tribute of affection and respect.

Therefore, Be It Resolved, That the medical board of the City Hospital, conscious of the loss it has sustained in the death of Charles Cook Ransom, a loss not only to each member of it individually, but also to the hospital which it represents, the department of the city government which it serves, and the larger interests of medical science, hereby places this minute upon its record, and be it also resolved that a copy of this minute be suitably transmitted to Mrs. Ransom; that a copy be posted in the Staff House of the City Hospital, and that a copy be submitted for publication in the local medical journals.

Theodore Janewa }
Joseph Collins. } Committee.
Harlow Brooks. }

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 17, 1910.

1. Operative Treatment of Atresia of the Vagina, By W. P. Graves.
2. Cancer of the Scrotum, By Robert M. Green.
3. Clinical and Bacteriological Researches on Mikulicz's Method of Rendering the Peritonæum Resistant to Surgical Infection, By E. de Paoli.
4. The Technique of Arthrotomy. A Report upon and Discussion of One Hundred and Ninety-eight Cases, By Andrew P. Cornwall.

Atresia.—Graves says that the operation for atresia is one that is attended with considerable danger of fatal sepsis, and every precaution should be taken to prevent infection. After evacuating the old menstrual blood, which is always of a thick tarry consistency, the cavities of the vagina and uterus should be most carefully irrigated. Where there is a definite membrane occluding the vagina, the method of operation is of extreme importance. The opening made by an incision sometimes closes up entirely, but more often results in one or more pinhole apertures through which the menstrual blood may partially flow. A certain amount of mucus and blood is dammed back into the vagina, becomes foully infected, and produces dire results. In order to leave the vagina in a permanently normal condition the occluding membrane should be completely dissected out and the wound edges approximated with great care. Such a wound will heal up by first intention even in the face of a badly septic discharge. The details of the operation for dissecting out an occluding membrane are as follows: After the septum has been incised and the contents of the space beyond have been removed, there should be a thorough cleansing of the parts. The edges of the septum should then be trimmed flush with the walls of the vagina. All scar tissue should be removed so as to prevent a future contraction. When the septum has been completely cleared away it will be found that there remains a denuded area which extends like a ring around the inner circumference of the vagina. The mucous membrane of the upper portion of the vagina should then be drawn down and approximated to that of the lower portion by interrupted catgut sutures. Such an operation should restore perfectly the normal calibre of the vagina and should not be followed by a tendency to the development of a stricture. The use of antiseptic douches twice or three times daily should be begun the day after the operation and should be kept up until the discharge completely disappears.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 19, 1910.

1. Operative Treatment of Simple Fractures, By A. F. Jonas.
2. Clinical Results of Gastroenterostomy for Nonmalignant Diseases, By John Dudley Dunham.
3. Blood Letting in Children, By Heinrich Stern.
4. An Original Method for Prevention of Perforation in Submucous Resection, By Richard M. Nelson.
5. Practical Mechanical Method of End to End Anastomosis of Bloodvessels Using Absorbable Magnesium Rings, By V. D. Lespinasse, G. Carl Fisher, and J. Eisenstaedt.
6. Absence of Hydrochloric Acid, with Blood in Stomach Secretions as a Symptom of Chronic Gastritis, By James Taft Pilcher.
7. Place of Hebosteotomy as an Aid to Delivery, By Channing W. Barrett.
8. Influence of Perigastric Lesions on Gastric Secretions. A Study Based on Clinical and Experimental Observation, By M. J. Lichty.
9. Treatment of Acute Anterior Poliomyelitis, By Andrew L. Skoog.
10. Metastasis and Tumor Immunity with a Transmissible Avian Neoplasm, By Peyton Rous.
11. Diagnosis and Treatment of the Earlier Changes in the Larynx in Pulmonary Tuberculosis, By C. L. Minor.
12. Antityphoid Vaccination. An Instance Illustrating Its Efficacy, By George B. Foster.

1. **Fractures.**—Jonas remarks that all fractures that can be adjusted manually and can be fixed in a position that will insure a good functional result, even though the Röntgen rays indicate a lack of perfect end to end approximation, are to be treated by the closed method. In all fractures with a marked deformity, such as overlapping, angulation, lack of contact of fractured surfaces, when it is apparent that union will not take place, an open operation is done. In all cases in which there is an interposition of soft structures or loose bone fragments, an open operation must be done. All compound fractures are treated by operation if the broken ends do not fall into easy apposition. All depressed cranial fractures are cases for an open operation. All spinal fractures showing symptoms of compression are cases for an open operation. The Röntgen ray must be employed whenever possible to aid in a proper estimation of the extent and location of the fracture. It must determine for us whether bone approximation is sufficient after the fixation appliance, internal or external, has been applied. Having determined at the earliest possible moment that manipulation is fruitless to replace the broken bones, an immediate operation should be done before the physiological rarefying process has begun, or at least before it is very far advanced.

2. **Gastroenterostomy.**—Dunham states that hyperchlorhydria as a symptom of chronic gastric ulcer is inconstant and should be disregarded. Perfect recovery may occur when atony of the stomach has existed before the devedopment of ulcer and motor insufficiency persists. Many of the fatalities would have been averted had the family physician made a diagnosis before serious complications had developed. Forty patients in this series of cases gave a history of ulcer covering five years or more before the diagnosis was made. Pylorectomy offered a better prognosis for recovery in five of the fatal cases. The legitimate field for gastroenterostomy in benign diseases of the stomach is in chronic ulcer near or below the pylorus with stenosis.

3. **Blood Letting in Children.**—Stern observes that the opinion prevails among most of those who have contributed to the subject since the revival of

bloodletting in the beginning of the nineties of the last century that early age, *per se*, offers no specific contraindication to the employment of this therapeutic procedure. In principle all these clinicians advocate bloodletting in suitable cases, although Marfan does not wish to see general depletion used in children under four years and topical depletion in those under fifteen months of life. On the other hand, the physicians of the Breslau Pædiatric Clinic do not hesitate to take recourse to venesection in the nursling when it seems indicated. There seem to exist no special reasons why depletion in children should not be undertaken for the amelioration of the same pathological state as in adults. Accordingly it may be indicated in affections of the heart and circulatory organs and diseases of the nervous system. Baginsky recounts the following diseases in which blood abstraction may become necessary in children: Pleuropneumonia, bronchopneumonia, capillary bronchitis with hyperæmic manifestations, chronic heart disease, rapidly succeeding convulsions caused by hyperæmia of the brain, and grave nephritides with uræmic symptoms.

6. **Achlorhydria Gastrica.**—Pilcher states that there is a definite entity presented in the stomachs of some patients suffering from various intraabdominal and extraabdominal pathological conditions, which is characterized by the absence of hydrochloric acid and the presence of "occult" blood. This condition is probably effected through the agency of a reflex nerve stimulation inhibiting first the production of free hydrochloric acid to only a moderate degree. This so modifies the inhibiting factor of the gastric juice that the necessary conditions for the growth of pathogenic bacteria are furnished, chief among which are to be reckoned the streptococci and colon group, which are present in striking numbers. These direct irritants, either themselves or in conjunction with a primary irritative factor, *e. g.*, gallstones, appendicular inflammation, pancreatitis, etc., perpetuate the pathological process until there is an achlorhydria produced. It is most probable that to the ulcerative erosion following this irritation the presence of blood may be ascribed. In 100 stomachs examined at operation by the author atrophy was never present, nor was there, except in one case, any evident insufficiency of the pylorus. There is a general symptomatology accompanying this condition which is very suggestive. The test meal recovered is indicative of the pathological process in the stomach. There were indications in but seven cases observed that there was no secretion from the stomach mucosa. In others the presence of mucus, the biuret reaction and coagulation after activation would tend to show that there was still a moderate degree of enzymatic action. The cases are therefore not "achylia gastrica." Proof of the ætiological factors has been deduced from the prompt and permanent recovery of the patients operated on. The condition is so common, approximately one in every fifteen stomach cases in which the patients were examined, and the indication it gives of irritation in other organs he believes is so firmly established, not to mention the potential factor for future trouble which it itself contains, that it merits more frequent consideration in the study of possible gastric conditions.

MEDICAL RECORD

November 19, 1910.

1. Chemical Problems in Diabetes, By Adolph Magnus-Levy.
2. The Causes of Death from Shock by Commercial Electric Currents, and the Treatment of the Same, By E. MacD. Stanton and Arthur Krida.
3. The Use of Thiosinamine in the Treatment of Cicatricial Formations Following Burns, By J. Ewing Mears.
4. Concerning the Restoration of Inhibitory Qualities in Liver Extracts, By D. M. Kaplan.
5. A New Theory of Eclampsia, By James R. Mitchell.

2. **The Causes of Death from Shock by Commercial Electric Currents.**—Stanton and Krida remark that there are many questions concerning this subject which remain as yet unsolved. The two great causes of death are cardiac fibrillation and respiratory paralysis. Low tension currents tend to kill chiefly by producing cardiac fibrillation. As the tension is increased the effect upon the heart becomes less pronounced, but at the same time the effect upon the central nervous system becomes more and more certain as the tension is increased so that with high tension currents death is more likely to be caused by respiratory failure, although if the contact is prolonged the heart is also stopped. They have been unable to find any reliable data concerning the action of commercial currents of more than 4,500 volts, but all evidence points to the central nervous system as being the chief sufferer from the effects of currents of more than 4,800 volts. Cardiac fibrillation is fatal under known methods of treatment. In cases of simple respiratory paralysis the patient may be kept alive by artificial respiration until the nervous system recovers from the effects of the shock.

3. **Thiosinamine.**—Mears has tried thiosinamine in the after treatment of burns. He cites the following statement: Thiosinamine exerts no influence upon the general system, its action is directly upon the blood making organs. Several hours after injection the leucocytes in the blood are greatly diminished in number, falling, according to von Hebra, from 14,000 to 4,000. This condition lasts but a short time, followed by a pronounced hyperleucocytosis, during which a marked destruction and absorption of exudates, of cicatricial, and other poorly nourished tissues occur. It has been used by clinicians in the treatment of lupus, old cicatrices, chronic glandular inflammations, keloid, urethral strictures, corneal opacities, and sclerotic conditions of the ear with consequent deafness, fibrous tumors, syphilitic lesions, and smallpox scars. It may be administered internally in capsules in from ½ to 3 grain doses. Locally it may be applied in soap or plaster, from 5 to 20 per cent. It may be injected hypodermically, from 1 to 4 grains in alcoholic solution, preferably in the intrascapular or gluteal region. In overdoses it produces toxic effects. Care should be taken to obtain the pure drug and that only which is dispensed by reliable pharmacists.

BRITISH MEDICAL JOURNAL.

November 5, 1910.

1. The Clinical Measurement of Diastolic Blood Pressure and Cardiac Strength, By Sir LAUDER BRUNTON.
2. The FitzPatrick Lectures on Greek Medicine in Rome, By Sir T. CLIFFORD ALLBUTT.
3. A Bad Case of Strangulated Omental Hernia, with very Few Symptoms, By ARTHUR ZELL CLAYDON CRESSY.
4. A Case of Tetanus Treated by Chloretone, By ROLAND A. HOBBS and ERIC W. SHEAF.

THE SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Section in Pathology.

5. The Nervous System in Chronic Alcoholism, By F. W. MOTT.
6. The Therapeutic Use of Alcohol Vapor Mixed with Oxygen, By W. H. WILLCOX and B. J. COLLINGWOOD.
7. Some Observations on Fatal Cases of Pulmonary Thrombosis, By ERNEST GLYNN and R. E. KNOWLES.
8. A Method of Distinguishing Dead from Live Leucocytes, By C. ACHARD.
9. The Effects of Artificial Respiration on the Stillborn, By J. A. BRAXTON HICKS.
10. The Variation in the Sizes of Red Blood Cells, By CECIL PRICE-JONES.
11. Polychromasia, and the Pathology of Hæmatomata, By G. R. WARD.
12. The Action of Oleic Acid and Its Soaps on the Blood, By A. E. BOYCOTT.
13. The Pathogenesis of Hereditary Hæmophilia, By T. ADDIS.
14. On the Absence of Altmann's Granules from Cells of Malignant New Growths, By HENRY BECKTON.
15. Chloroform Necrosis of the Liver, By G. W. GOODHART.

Combined Sections in Pathology and Bacteriology.

16. The Diagnostic Use of the Complement Fixation Method, By Professor A. WASSERMANN.
17. The Practical Value of the Wassermann Reaction, By H. WANSEY BAYLY.
18. The Fixation of Complement in General, By ROBERT MUIR.
19. On the Structure of Complement in Relation to Deviation, By J. HENDERSON-SMITH.
20. The Diagnosis of Syphilis by the Complemental Deviation Method, By T. W. BASSETT-SMITH.
21. Individual Properties of Complement and Organ Extract, By IVY MCKENZIE.
22. Comparison of the Original Wassermann Method with Some of Its Modifications, By H. R. DEAN.
23. The Guidance Afforded by Complement Fixation Methods, By Captain L. W. HARRISON.
24. Lecithin and Cholesterin as Reagents for the Detection of Syphilitic Sera, By CARL H. BROWNING.
25. Complement Deviation in Relation to Carcinoma, By J. O. WAKELIN BARRATT.

6. **Alcohol Vapor Mixed with Oxygen.**—Willcox and Collingwood say that the administration of oxygen bubbled through absolute alcohol is a marked cardiac stimulant in cases of heart failure. The administration is pleasant and nonirritating to the patient; it causes no ill effects to the lungs or bodily system. A rapid feeble pulse is slowed by some ten or twenty beats a minute, and there is improvement in its force and volume. The blood pressure, if low from cardiac failure, is raised from 10 to 30 mm. of mercury as measured by the Riva-Rocci sphygmomanometer. It is better to use absolute alcohol in the wash bottle, since with less concentrated forms of alcohol an insufficient amount of alcoholic vapor will be contained in the oxygen. The oxygen should be bubbled through the alcohol in a rapid stream. The full effect of the administration is obtained after five minutes, and lasts for several minutes afterward. As the effect passes off the administration should be repeated.

7. **Pulmonary Thrombosis.**—Glynn and Knowles say that in their experience spontaneous thrombosis is much commoner than embolism, in the proportion of 8 to 1 in some 1,200 post mortem examinations from a single hospital. They believe an unaccountable acceleration of the pulse or respiration rate, beginning in the second week after a major operation, especially abdominal, and associated with slight pyrexia, suggests the possibility of spontaneous pulmonary thrombosis and of a sudden fatal termination about the third week. Cases of spontaneous thrombosis are overlooked from the assumption that only embolism can cause death in a few minutes, from neglect to remove and harden the heart and lungs together, and trace the distribution of the thrombi *in situ* in properly hardened specimens, and especially from neglect to make a thorough microscopical examination. Even the association of pulmonary clots with others in the systemic veins does not necessarily prove that the former are embolic. Both may have arisen spontaneously and separately from similar causes.

9. **Artificial Respiration in the Stillborn.**—Hicks arrives at the following conclusions: Lungs artificially inflated can resemble in every particular the lungs of complete respiration. The same statements hold good for the stomach and intestines. No excessive force in inflation is required to produce these effects, the ordinary midwifery methods being sufficient. A simple method, such as mouth to mouth inflation, will produce these appearances. For a lung artificially inflated to resemble a lung inflated by respiratory efforts, attempts at artificial respiration must have been carried out for at least twenty minutes. Though as a defense in infanticide it may be urged that the appearances of normal respiration are due to artificial inflation, it would, however, be necessary to prove that *a*, the party or parties charged were capable of performing the act of artificial inflation; *b*, that the time was sufficiently long for inflation to have occurred; and *c*, lastly, that no other signs of live birth were present. If all the conditions laid down are fulfilled, there is no means of saying whether a child has normally respired or whether the appearances are due to artificial inflation.

11. **Polychromasia.**—Ward found the following changes in all blood corpuscles in hæmatomata: The blood was fluid, sometimes viscid, never coagulated. On standing the corpuscles separated out. Rouleaux formation was absent or very defective. The leucocytes showed fragmentation of the nucleus—in some cases they were increased and in some were engulfing red corpuscles. Crenation was absent. Fragmentation was not present, but was very easily produced. Loss of elasticity was most pronounced, and for this reason the examination of spread slides was only possible if the hæmatomata were opened early. Hæmoglobinæmia was absent. The intensity of staining reaction as contrasted with normal blood was impaired. These changes were apt to be accentuated in the older cases.

16. **Complement Fixation Method.**—Wassermann reviews his method of research, and says that most of the authors who proposed this and that modification of the original method, sought to make the system so sensitive that it should show a still

higher percentage of positive reactions than the original method. With this aim one author proposed the use of nonheated serum; another, as Noguchi for example, the use of human blood corpuscles instead of the sheep blood corpuscles. According to Wassermann's test of them, none of these modifications are to be recommended for practice. This applies very particularly to Noguchi's procedure, as Sleeswyk, working in Wassermann's laboratory, has recently demonstrated through careful tests. It suffers like the other methods from the fault that it is too delicate, that is, it gives reactions with the serum of patients having other diseases while the original method shows no reaction in these cases. Wassermann cannot, therefore, recommend the use of these procedures or modifications for practice.

LANCET.

November 5, 1910.

1. Greek Medicine in Rome, By Sir T. Clifford Allbutt.
2. The Traumatic Neuroses, By Thomas R. Glynn.
3. Desmoid Tumors By Rutherford Morison and Hamilton Drummond.
4. Notes of Some Cases Treated by Vaccines of Unknown Organisms, By E. C. Bousfield.
5. Primary Acidosis; Recovery, By Sidney Bontor.
6. The Use of the Faradic Current in the Treatment of Persistent Aphonia Following Laryngitis: Two Cases, By Francis Hernaman-Johnson.
7. Notes on a Case of Phlegmasia Alba Dolens, Followed by Pulmonary Embolism and Infarction of the Lung; Recovery, By J. C. Curtis.
8. The Influence of Quinine and Morphine upon Phagocytosis, By H. Lyon Smith.

3. **Desmoid Tumors.**—Morison and Drummond observe that there are certain tumors—desmoids—originating in the abdominal wall, chiefly in the upper half of the rectus muscle, but also in connection with the other muscles, which are of considerable clinical importance. They are likely to be mistaken for growths in the abdomen, unless the possibility of their occurrence is remembered. Their association with pregnancy is so frequent as to constitute more than a coincidence. Possibly traumatism, by muscle stretching or tearing, is of ætiological significance. A firm, but not tender, sausageshaped tumor, possessed of some mobility, across, but not in the direction of the fibres of the relaxed muscle, with which it appears to be associated, becoming fixed when that muscle is made tense, and occurring in a woman recently pregnant, is a desmoid tumor. The treatment is to excise the growth at once, along with a free margin of the surrounding structures, including the peritonæum underlying it.

4. **Vaccine of Unknown Organisms.**—Bousfield remarks that the question is often raised as to how much blood is needed for the preparation of a vaccine. It cannot be too insistently stated that, for blood cultures at any rate, the latter must be made at the bedside, and incubated at the earliest possible moment. Drops of blood from fingers or ears are absolutely worthless either for examination for bacteria—except in anthrax—or for the preparation of vaccines, and most of all does this apply to blood sent in capillary or other tubes, in which the whole of the particulate matter is entangled in the clot, even if one could have the least confidence that any growth obtained or organism seen was actually present in the blood, and was not the result of accidental contamination. It is hardly too much to say that the presence of the "opsonist" is almost as necessary for the success of a blood culture as that of the surgeon for the performance of an operation.

6. **Faradic Current in Aphonia.**—Hernaman-Johnson states that textbook accounts of chronic laryngitis and its accompanying disturbances of voice err in regarding the disease as if it were identified with a tracheitis. In other words, attention is concentrated on the mucous membrane to the neglect of other equally important structures. The larynx is primarily a mechanical device for the production of vocal sounds, and depends for its proper functioning even more upon the integrity of its muscles and nerves than upon the healthiness of their covering. In chronic catarrh of this organ the muscles become secondarily affected, and the delicate terminals of the motor nerves in all probability undergo an inflammatory degeneration. An acutely inflamed mucosa doubtless demands local sedative applications; and even when the trouble has become chronic, astringent sprays, paintings, etc., can often play an important part. But the tendency in many chronic cases is for the mucous engorgement to disappear to a great extent, whereas the damage to the neuromuscular apparatus remains. Under such circumstances it is unreasonable to expect a cure by the ordinary means. On the other hand, improvement may be looked for from such measures of "natural therapy" as produce benefit in similar pathological conditions elsewhere—e. g., in that form of facial palsy which is the result of exposure to cold. In treating paresis of laryngeal muscles by faradization we are at a disadvantage as compared with the same conditions occurring in an arm or leg. We cannot single out the affected muscle or muscles for individual stimulation. This difficulty is not, however, insurmountable. The secret of success lies in the regular and persistent use of mild currents, which are not calculated to produce violent contractions of opposing healthy muscles. If carefully applied for a prolonged period this form of electricity exercises a selective action on the affected structures and eventually restores their tone. Remarkable as are the results of faradism in suitable cases, we must not fall into the error of regarding it as a panacea for each and every form of catarrhal aphonia. Where the laryngoscope shows marked swelling and congestion of the cords the mucous membrane must be attacked vigorously on orthodox lines, and here again we are likely to meet with little success if the nasopharynx is in an unhealthy condition. Nevertheless, even where the mucosa is the part most at fault, the judicious use of the interrupted current forms a valuable adjunct to routine treatment.

MEDIZINISCHE KLINIK.

October 30, 1910.

1. Pathology of the Purulent and Tuberculous Diseases of the Kidney, By L. Jores.
2. Subcutaneous Injuries of the Abdomen (*Concluded*), By Oscar Foederl.
3. The Physical Examination at the Beginning and End of Pulmonary Treatment. By F. Rumpf.
4. Preliminary Conditions to Radical X Ray Treatments, By L. Freund.

5. The Relations of Pernicious Anæmia to Syphilis, By Otto Roth.
6. Organotherapy of Postoperative Parathyreopriva Tetany, By Bircher.
7. Epidemic Spinal Infantile Paralysis and Its Appearance in Upper Austria in 1909, By Georg Stieffler.
8. Anæsthetin-Coryfin and Cycloform-Coryfin, By Egmont Baumgarten.
9. Radioactivity of the Air and Earth, By A. Gockel.
10. Disinfection of the Skin with Tincture of Iodine, By A. Wettstein.

2. **Subcutaneous Injuries of the Abdomen.**—Foederl advocates an exploratory operation as early as possible after severe nonpenetrating injuries of the abdomen because the primary symptoms are incompetent to show whether serious injury has been done or not, and that when symptoms indicating serious internal injury develop it is usually too late to save the life of the patient. He says that no conclusion in regard to the injury can be drawn from the presence and intensity, or the absence of shock, for we meet with severe symptoms of shock in cases in which there are no injuries worth mention other than a concussion of the abdomen, and no symptoms of shock with such serious injuries as lacerations of the liver and rupture of the intestines. The inadequacy of other symptoms, such as the temperature, pulse, cardiac action, and gastric disturbances are dwelt upon. All such cases should be submitted to the examination of a specialist at the earliest possible moment. He protests strongly against the administration of opium or other narcotics until the diagnosis is positive, because they obscure the clinical picture, the diagnosis, and the indications for treatment. They should be reserved for use in cases in which the diagnosis is positive, or in which both removal and operation are impossible on account of surrounding conditions, or in those cases in which the injury is so serious that death is inevitable. He states that many patients with subcutaneous injuries of the abdomen die as the direct result of faulty initiative on the part of the physician.

4. **Radical X Ray Treatment.**—Freund has tabulated the diseases that may be treated with the x rays into four classes according to their amenability to this treatment. The first class, which is the most amenable, is composed of the diseases of the skin that affect the portions of the body covered with hair. The reason why diseases of the skin in the hairy parts of the body should respond to the x rays better than those in other parts he does not know, but says it is a clinical fact. In many of these cases a single treatment is enough to effect a cure, and in all a cure can be effected by repeated exposures. The second class is composed of a number of skin diseases, including lupus vulgaris, ulcus rodens, epithelioma, warts, trachoma, and tuberculous osteoarthritis, in which a radical cure is to be obtained through repeated exposures. The third class is composed of other skin diseases, like prurigo, eczema, psoriasis, lichen, lupus erythematosus, acne, and onychia, in which treatment affords a temporary improvement after which recurrences are apt to take place. The fourth class consists of deep seated tumors, keloids, hypertrophies, and diseases in which the result of treatment is uncertain. In regard to the treatment of tumors he says that the greater the tumor masses are which are exposed to the influence of the x rays, the greater their thickness and their atomic weight, and the weaker the irradiation used, the less is the outlook for a radical improvement and the nearer is the danger approached that the advancement of the pathological process will be favored by the irradiation.

5. **Pernicious Anæmia and Syphilis.**—Roth reports a case of pernicious anæmia, the cause of which he believes to have been syphilis through exclusion of other causes. Wassermann's reaction was positive.

6. **Organotherapy of Postoperative Parathyreopriva Tetany.**—Bircher reports two cases of tetany following removal of the thyreoid that were successfully treated with thyreoid tablets.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

November 1, 1910.

1. The Different Resistance of Bacteria within and without the Infected Organism, By Stern.
2. The Influence Exerted upon von Pirquet's Tuberculin Reaction by Various Diseases, By Rolly.
3. The Action of Lime, By Meyer.
4. Sudden Fluctuations in the Blood Pressure and Their Causes, By Zabel.
5. The Use of Pfannenstiel's Oblique Incision through the Fascia, By Jaschke.
6. The Forensic Demonstration of the Blood on the Basis of Hæmochromogen Crystals, By Methling.
7. Experimental Studies Concerning the Genesis of Otogenous Pyæmia, By Haymann.
8. An Uncommon Filaria Disease. Cure by Ehrlich-Hata, By Reichmann.
9. Fractures of the Epichondyle of hte Humerus, By Glaessner and Milavec.
10. Polythelia and Axillary Milk Glands, By Hofstaetter
11. Influencing Exophthalmic Goître through the Nose, By Hoffmann.
12. Remarks Concerning the Pathogenity of the Amœba Dysenteriæ, By Tanaka.
13. Extrophia Vesicæ Urinariæ with Adenocarcinoma Gelatiniforme, By Hager.
14. Suicide by Cutting the Throat in Paratyphus, By Mayer.
15. Diagnosis of Monolateral Deafness, By Davidson.
16. Seats for School Children, By Wolfer.
17. The Origin of the Substances Productive of Wassermann's Reaction, By Pappenheim.
18. The Opening of the Second International Conference for the Investigation of Cancer in Paris, By Czerny.

2. **The Influence Exerted upon von Pirquet's Tuberculin Reaction by Various Diseases.**—Rolly finds that in a great number of patients the cutaneous tuberculin reaction is negative during the course of various diseases, although after convalescence is established the reaction is distinctly positive. This he ascribes not to the presence of a special immunity, but more probably to a local change in the skin.

4. **Sudden Fluctuations of the Blood Pressure.**—Zabel states that the blood pressure undergoes irregular fluctuations in normal individuals, that the magnitude of these fluctuations differs individually, and that stimulations of all kinds are able to call forth temporary increases of the blood pressure.

6. **The Forensic Demonstration of Blood by Hæmochromogen Crystals.** — Methling asserts that the formation of hæmochromogen crystals is not absolutely sure and does not always take place when blood is certainly present. The method of

demonstration with pyridin and ammonium sulphide is dependent on contingencies that should not be overlooked; only the purest pyridin must be used. In the cases in which no crystals are formed the typical hæmochromogen spectrum is present. If the solutions are so weak that no absorption bands appear in the visible part of the spectrum yet the typical broad bands of the cyanhæmochromogen can be found in the violet portion.

8. **An Uncommon Filaria Disease.**—Reichmann describes the case of a syphilitic, twenty-three years old, from whose pleural cavity he removed 250 c.c. of a slightly milky fluid containing a species of filaria not hitherto known. The patient recovered after an injection of 606.

11. **Exophthalmic Goître and the Nose.**—Hoffmann reports three cases of exophthalmic goitre in which the symptoms retrogressed after cauterization of the turbinates.

12. **The Amœba Dysenteriæ.**—Tanaka is of the opinion that the amœbæ are not in the intestinal wall in the first stage of the disease, but enter the wall after the formation of the ulcers and then aggravate the condition. The initial focus in the submucosa which penetrates into the mucosa and causes the ulceration is due, he thinks, to another, as yet unknown, microorganism.

WIENER KLINISCHE WOCHENSCHRIFT.

October 27, 1910.

1. Rudolf Chrobak, By H. Peham.
2. Supernumerary, Abnormally Opening Ureters, By Robert Cristofoletti.
3. A New Method for the Conservation of Different Immune Sera and Antigens, By S. Stoeckel.
4. The Condition of the Blood in Lymphogranulomatosis, together with Remarks Concerning the Blood Changes in Lymphosarcomatosis and Tuberculosis of the Lymphatic Glands, By Erich Fabian.
5. A Contribution to the Nature of Wassermann's Reaction, By H. Guth.
6. Report Concerning Fifty Cases Treated with Ehrlich-Hata's 606, By R. Polland and R. Knauer.
7. Experiences with Ehrlich's 606, By Julius Fuerth.

2. **Supernumerary, Abnormally Opening Ureters.**—Cristofoletti reports a case of a supernumerary ureter from the left kidney opening on the left side of the vestibulum vaginæ near the mouth of the urethra, met with in a girl, fifteen years old. It was dilated and formed a tortuous cystic tumor as large as a finger along the anterior and lateral walls of the vagina. Cystoscopic examination showed the right ureter to be functionating normally, while a thinner stream escaped from the normally situated mouth of the left ureter. The supernumerary ureter was removed by a laparotomy, after which the patient was continent and had no further trouble.

3. **The Blood in Lymphogranulomatosis.**—Fabian says that the most frequent condition of the blood met with in lymphogranulomatosis, ordinarily called Hodgkin's disease, is an absolute neutrophile leucocytosis of moderate degree with polymorphic nuclei. The blood may be unchanged, as it is in perhaps a fifth of the cases. In nearly a fifth of the cases a more or less marked leucopenia is present, either during the entire course, or only transiently, more frequently in the later stage. The blood often exhibits qualitatively a relative neutrophile leucocytosis with polymorphic nuclei, i. e., an increase in the percentage of the neutrophilic leucocytes with polymorphic nuclei, to ninety-nine per cent. and more, and a corresponding decrease of the percentage of lymphocytes, to three per cent. and almost to nothing, usually with simultaneous absolute leucocytosis, sometimes with leucopenia and rarely with a normal number of leucocytes. In perhaps a quarter of the cases there is eosinophilia of the blood, usually slight or moderate, rarely of marked degree. Very rarely there is an increase of the fatty granular cells. Occasional myelocytes appear here and there, but quantities sufficient to have their percentage determined are exceptional. In a single case an enormous increase of the blood discs has been mentioned. Sometimes a slight, rarely a marked, relative lymphocytosis is to be noticed; it is usually transient. A general secondary anæmia is developed in the course of the disease, at first moderate, later becoming more marked. Under prolonged observation the blood condition may fluctuate in one and the same case; the leucocytosis may vary in strength at different times, it may at times be absent, and it may be associated with a leucopenia. He considers that a distinctive diagnosis between lymphogranulomatosis on the one hand and lymphosarcomatosis and universal tuberculosis of the lymphatic glands on the other to be in general impossible through an examination of the blood.

6. **606.**—Polland and Knauer analyze the fifty cases in which they have employed this remedy and come to the following conclusions: 1. It surpasses in promptness and intensity of action all methods of mercurial treatment hitherto employed in all manifestation in the primary and secondary stages; particularly in syphilis maligna præcox and resistance to mercury, as well as in most cases of gummatous syphilis. 2. Aside from comparatively unimportant unpleasantnesses no particular disturbances or dangers to the patient are associated with the use of the remedy. Contraindications are to be looked for in diseases of the heart, or atheroma of the vessels. 3. The question whether it is in fact possible to produce a permanent cure of syphilis, if not in all in at least a large majority of the cases, through a single application of the remedy, in the sense of a "therapia sterilisans magna," as well as whether a curative action is to be expected in the parasyphilitic diseases of the central nervous system, must be answered by future experience.

AMERICAN JOURNAL OF SURGERY.

November, 1910.

1. Iodine: Its Most Important and Latest Uses, By J. L. Wollheim.
2. Treatment of Lateral Curvature of the Spine, By Carl R. Keppler.
3. Fractures—Dislocation of the Spinal Column, By W. L. Estes.
4. Local Anæsthesia. By Arthur E. Hertzler.
5. An Improved Composite Cystoscope, By J. F. McCarthy.
6. A Foot and Leg Table, a Hand Table, for Use in Surgical Out Patient Department, By Walter M. Brickner.

1. **Iodine.**—Wollheim speaks of the antiseptic value of iodine. He states that we possess in iodine a very potent drug. Its antiseptic power has been very conclusively proved by Kinnaman, from whose

original paper he quotes: From 0.2 to 1.0 per cent. iodine is an antiseptic of marked potency. It is far superior to bichloride of mercury. Two per cent. solution killed *Streptococcus pyogenes* in two minutes. It is easily prepared and is stable. It is one fourth as toxic as bichloride of mercury. It does not coagulate albumin. It is effective in very brief time. The stain soon disappears (easily removed by aqua ammonii). It is very penetrating. One half of one per cent. is strong enough for all purposes as an antiseptic. He then quotes Nicholas Senn, who was a strong advocate of iodine in surgery. In his valuable article Senn's conclusions are: Iodine is the safest and most potent of all known antiseptics. Iodine in proper dilution to serve its purposes as an antiseptic does not damage the tissues; on the contrary, it acts the part of a useful tissue stimulant, producing an active phagocytosis—a process so desirable in the treatment of acute and chronic inflammatory affections. In the treatment of simple hyperplastic goître, actinomycosis and blastomycosis the local use of iodine is made more effective by cataphoresis.

3. **Fractures and Dislocation of the Spinal Column.**—Estes observes that fracture of the spinal column is always a grave injury. The fatality is greatest the higher up the lesion occurs. In cervical fractures, as the lesion is so near the medulla and the vasomotor centres, ascending inflammation is soon followed by death or rapid trophic changes, which soon usher in the lethal stage. Fractures high up in the dorsal region are also very dangerous injuries and are attended by most uncomfortable phenomena. The lower dorsal region injuries allow better chances for life, though paraplegia may persist. Fractures below the second lumbar vertebra offer the best chances for recovery, and the results of operative proceedings are much more encouraging. As the cauda equina is much tougher and the separate nerves offer greater resistance to pressure, delayed operations may in this region be followed by good results. The symptoms of injury to the cauda equina are sometimes very irregular and varied, and are well worth study. The death rate from spinal fractures is about fifty per cent. Early operation offers the only chance for life in case of complete transverse lesion high up in the cord; it may not only preserve life, but also in a few cases restore some degree of usefulness to paralyzed parts when the lesion is from the middorsal region downward. Delayed operations in these regions are usually of no avail. Injuries below the second lumbar vertebra offer good hope for at least partial functional recovery from operative intervention. Even delayed operations may be of great service.

EDINBURGH MEDICAL JOURNAL.

November, 1910.

1. Bier's Treatment by Venous Hyperæmia, By DAVID MACEWAN.
2. The Significance of Transient Cerebral Crises and Seizures, as Occurring in Arteriosclerotics, By JAMES D. HEARD.
3. Congenital Dextrocardia. Cor Triloculare Biventriculare, By W. E. FOGGIE.
4. The Frequency of Sphenoidal Sinus Suppuration, By J. D. COMRIE and J. S. FRASER.
5. Scopolamine-Morphine as an Obstetric Anæsthetic, By H. RUTHVEN LAWRENCE.

1. **Bier's Treatment by Venous Hyperæmia.**—MacEwan remarks that Bier has presented us with a fresh conception of the nature and purpose of inflammation, and has made important additions to our resources for subduing it. In closed tuberculosis, venous congestion is limited and uncertain in its effects, and is sometimes productive of harm. In open tuberculosis it is comparatively safe and yields successful results, especially when the suction method is used. It acts well in circumscribed inflammation, such as carbuncle, abscess, and bursitis, and gives particularly good results in mammary abscess. It is also useful in obstinate septic sinuses. For all these cases suction is the best method. It acts less favorably, and in some cases prejudicially, in spreading inflammation. It gives good results in gonorrhœal arthritis, but should be used with caution in joint suppuration. It is contraindicated in erysipelas, and is of uncertain value in acute osteomyelitis. It acts beneficially in infected wounds.

3. **Congenital Dextrocardia.**—Foggie remarks that the diagnosis of congenital dextrocardia depends on the recognition of the dextrocardia and the proof of its being congenital. Dextrocardia is recognized by the absence by all the usual clinical methods of a heart on the left side and its presence on the right side. This implies in straightforward cases that an apex beat, or presumably such, is beating on the right side, and can be confirmed by palpation, that percussion supports the underlying presence of a heart, and that auscultation gives heart sounds of such strength and tone as such a change in position would lead one to expect. All this is generally described in typical mirror cases, but of course it may be modified if the heart is merely a little to the right of the middle line. Many of the cases described respond quite readily to these methods of examination, which have been applied to their solution. At the same time these methods have their limitation, as cases which were presumed to be dextrocardia have pathologically been found to be merely enlargements of the heart to the right. Further, these methods, without a complete anamnesis, cannot exclude a lateral displacement of considerable degree. The other means of determining the presence of a dextrocardia is by the newer x ray method. While it confirms the dextrocardia, its most hopeful use is in determining the axis of the heart. In real congenital dextrocardia the axis should run from above and left downward and to the right, and not as in more lateral displacement with so often merely an axis parallel with its original, or only slightly less sloped to the right. As a necessary sequel to the recognition of the dextrocardia there is the need to exclude any general inversion of the other organs. The second point is to determine the congenital nature of the displacement, which is only noted in a very few instances. Where it was so observed, the next point obviously is to settle whether it is of intrinsic or extrinsic origin. This in itself is no easy matter, and many cases reported as true dextrocardia have at a later date been shown to be due to the extrinsic causes. If there is no note as to the condition from birth, then a proof of its congenital nature has to rest on a personal history free from such chest conditions as might cause displacement, along with a physical

examination that supports this contention. The special points requiring establishment are the free movements of the heart and the lungs, equal respiratory murmur on the two sides, and absence of any change in the shape or size of the chest that might be suggestive of past disease. An x ray examination is also useful here in showing a healthy lung condition and in defining the level and the movements of the diaphragm, and thus helping to exclude past pleurisy or pulmonary retraction.

5. **Scopolamine-Morphine as an Obstetric Anæsthetic.**—Lawrence is in favor of scopolamine-morphine as an obstetric anæsthetic. The advantages obtained by its use are not confined entirely to the patient. It is a help to the busy practitioner in the conduct of his work, for he is able to produce an analgesia for his patient without having to be constantly present in person to administer chloroform or other anæsthetic during the pains. This, too, will assist him in the face of relatives and patient, who are impatient and anxious, and possibly losing faith in his skill, because they are unable to understand that labor is a process which must take its own time to pass through stages of preparation and expulsion, and cannot be brought to a speedy end by some simple manœuvre comparable to drawing a tooth. The sight of the patient calmly sleeping through the pains is bound to have a reassuring effect on the relatives and friends. The freedom from exhaustion which follows its use is a powerful argument in its favor. Of the disadvantages he says that in a small percentage of cases the result is the opposite of that expected, and the patient becomes excited and incoherent. This condition need cause no alarm, however, and as a rule is overcome by a few inhalations of chloroform, or by a slight increase in the dose of morphine. The occurrence of thirst and flushing is rare, and is a mere nothing when compared to the actual pain of labor. Some observers contend that the sleep which usually follows the completion of delivery is a disadvantage. The chief argument against the use of scopolamine would seem to be the effect upon the child, but the experiments in doses with the morphine part of the treatment have shown pretty conclusively that the torpor of the infant is due to the latter drug. Careful individualization of the dose, and the nonrepetition of the morphine, whenever possible, will do much to remove this objection. The more experienced the practitioner becomes in the use of the drug, the better the results he will achieve.

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Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Twenty-third Annual Meeting, held in Syracuse, N. Y., September 20, 21, and 22, 1910.

The President, Dr. Aaron B. Miller, of Syracuse, in the Chair.

(Continued from page 1046.)

Deferred Operations for Extrauterine Pregnancy.—Dr. Ralph Waldo, of New York, stated that they had had many patients brought into the Lebanon Hospital in a very desperate condition, and out of the eighty-one cases that he reported there had been but three deaths. It was thought that two or three patients would die in the ambulance. They were freely stimulated and reached the hospital moribund. At no time after reaching the hospital would they have stood an anæsthetic or the slightest operation. Autopsies proved the diagnosis of ruptured extrauterine gestation sac to be correct. The third patient who died was one of these unfortunate ones that were occasionally met with by all surgeons; she was making an absolutely normal convalescence when she suddenly died from pulmonary embolism. Seventy-eight other patients were operated upon by the abdominal route, and recovered.

After a severe hæmorrhage another did not take place in less than from a week to ten days. In from two to seven days, depending upon the condition, the abdomen was opened from above. The clots and free blood were rapidly removed with the hand and dry gauze sponges, but the abdominal cavity was never irrigated. Formerly, where the patient had lost a large amount of blood they put a quart or two of normal saline solution in the abdominal cavity, and left it there to be absorbed. More recently this saline had been given in rare instances in the cellular tissue by hypodermoclysis or more frequently in the rectum. In one instance only in the cases reported was the abdomen drained; in all others it was closed. The entire operation required from eight to twenty minutes. He preferred the abdominal route because the operation could be performed much quicker and, when the mass was high up and the vagina small, much better. It might be well for him to state that he performed many operations on the tubes and ovaries through the vagina. He was not prejudiced in favor of the abdominal route.

Dr. L. F. Smead, of Toledo, stated that a woman, twenty-five years of age, was brought to him with a diagnosis of ectopic pregnancy. This was her second pregnancy. Her first pregnancy was cared for by a physician who brought the patient to him, so that they knew the exact condition. At the same time there were no abnormal symptoms. The history of the case was that for two or three days there was slight pain in the right side, and during the night preceding the day upon which he saw her there was a slight flow. There was no tenderness in the abdomen particularly, and on vaginal examination he found a slight mass over the right cornu of the uterus.

Dr. H. W. Longyear, of Detroit, said this matter of deferred operation in extrauterine pregnancy in the presence of shock had been threshed out in this association several times and if he remembered rightly the consensus had been decidedly in favor of immediate operation. It was his opinion that an operation should be done in these cases even in the presence of extreme shock. He knew of no other class of cases in which one waited in the presence of hæmorrhage for shock to cease. We operated primarily to stop hæmorrhage, and to wait for shock to cease in some cases would be fatal.

Dr. J. H. Carstens, of Detroit, said that Dr. Longyear had struck the keynote. If there was hæmorrhage from a leg that had been cut off, one did not wait for shock to subside, but stopped the hæmorrhage. He believed in operating in these cases promptly.

Dr. **William H. Humiston**, of Cleveland, had had an unusual record in cases of ruptured tubal gestation sacs; he had yet to have his first fatal case, and he operated on the patients as soon as he could get them ready for operation, and get his instruments there and assistants. He did not care what condition the patient was in, whether in shock or not.

Dr. **Henry S. Lott**, of Winston, N. C., wished to emphasize the character of the pain. Several times he had made a diagnosis of ectopic pregnancy in the early weeks by sitting by the side of the bed and watching the patient for several hours. The pain was always recurrent, rhythmic, and explosive, whereas if the appendix was the seat of trouble the pain was continuous without intermissions, and very often without remissions.

Dr. **J. Garland Sherrill**, of Louisville, agreed with Dr. Carstens and Dr. Humiston.

Dr. **E. Gustav Zinke**, of Cincinnati, said that there were exceptional cases. Extrauterine pregnancy was not always the same. Some of these patients recovered without an operation. We found these symptoms when we operated for other condition. Tubal pregnancy terminated in three different ways. In tubal abortion the ovum became absorbed and an operation was not necessary by any means in every case. There might be a rupture between the layers of the broad ligament or into the peritoneal cavity. In the case of rupture between the layers of the broad ligament there was a well defined tumor formed. In the case of rupture into the peritoneal cavity there was sudden shock with all the signs of internal hæmorrhage. That was a case in which prompt action was indicated, and it was for the operator to decide whether an operation should be performed at once or whether he could wait. In those cases in which the tube ruptured into the peritoneal cavity, with severe hæmorrhage and all the symptoms of shock, in which the picture was complete, they did not see the patients in the hospital, but usually at their homes or in places where opening of the abdomen was prohibited. It would mean death to operate at once, because the surgeon was not prepared and the patient was not prepared. Experience had taught us that, by putting these patients in the recumbent position and keeping them there with an icebag over the abdomen and lowering the head and preparing to operate, often within half an hour or an hour improvement in the patient's condition took place. The pulse came up, began to get stronger, and with the appearance of a stronger pulse, on digital examination we felt the formation of a tumor through the vagina. In some cases where that tumor did not appear the vaginal vault became more or less flattened. There was no resistance. We felt nothing apparently. In these cases hæmorrhage went on and such patients were not the ones that must be operated on at once, for if an operation was done they would die. But in the other instances, where a tumor formed, we could afford to wait longer, for encapsulation would take place and the patient could be operated on with absolute safety within a few days or even weeks.

Dr. **Lewis S. McMurtry**, of Louisville, said that the diagnosis was easy in these cases. He had known women who had had one attack of tubal pregnancy and been operated on to make the diagnosis themselves in the second instance and call the doctor and tell him the condition that existed. He had one instance of that kind in mind then, and there was no trouble with the diagnosis and the treatment. When a woman was bleeding to death inside there was only one indication, and that was to operate as soon as possible.

Dr. **Charles L. Bonifield**, of Cincinnati, wished to emphasize the point that in these cases by the time the operator got to the patient usually the hæmorrhage had taken place and the surgeon did not operate to stop the hæmorrhage, but to relieve shock, because in the majority of cases the hæmorrhage had already stopped. The patients who bled profusely did so quickly until blood pressure was relieved, and then the bleeding was slow until it stopped entirely.

Dr. **Walter B. Chase**, of Brooklyn, said that every member of this association believed he was grounded in the principles of surgery, but they had different methods of reaching the same end. They could not make a rule which would apply to every case of tubal pregnancy. The man who attempted to do it would go wrong more than half the time. Every case must be treated according to the findings and according to whether or not the physician was prepared to treat it at the time.

Dr. **Joseph Price**, of Philadelphia, felt that cases of ruptured gestation sac and all perforative forms of disease belonged to the calamities, and they should be prepared to operate promptly. The surgeon should be the cleanest and most prepared man living.

Dr. **Congdon** remarked that it was not generally his policy to cross swords with his friends, but when they made the assertion that the diagnosis of ectopic pregnancy was always easy and that any one could make it without any preparation, he certainly must take exception to the statements. The members of this association meant that they could make a diagnosis, but not the average general practitioner.

Dr. **Waldo** said that a mistake that was made much more frequently than any other was that the patient was suffering from incomplete abortion.

Tumors of the Bladder.—Dr. **John F. Erdmann** and Dr. **Joseph F. McCarthy**, of New York, read a joint paper on this subject. They reported ten cases in detail. Tumors of the bladder, they said, did not always admit clinically of a strict distinction between them, inasmuch as a small papilloma might give rise to a fatal hæmaturia as well as a malignant one. However, one might arrive in certain cases at a precise diagnosis based upon the clinical evolution, the physical signs, and the examination of the fragments expelled. Benign tumors might recur under a malignant form, a long period of time intervening before the recurrence; and it was a question whether the tumor beginning as a benign one had not become transformed into a malignant one. A tumor might also recur after a long period as a benign one.

Dr. **James E. Sadlier**, of Poughkeepsie, N. Y., reported the case of a woman, sixty years of age. Cystoscopic examination of the bladder showed a tumor on the right side, somewhat posterior, but well above the right ureteral orifice, the tumor at its base being of about the size of a silver dollar. It was protruding into the bladder and the surface had a sloughing appearance. The base was thick and indurated, and with a forceps through a Kelly cystoscope he was enabled to remove a fragment or two which the pathologist pronounced to be epithelioma undergoing carcinomatous change. In this case he tried the perineal operation as suggested by Dr. Charles Mayo and found it to be a comparatively easy operation.

Dr. McCarthy stated that those who had had anything to do with these growths knew they recurred with great frequency, and if there was any method of treating the smaller ones that did not involve a radical operative procedure, we should welcome it. Within the last few months Dr. Keyes and Dr. Beer, of New York, had treated these growths by fulguration or the high frequency current. He had treated by this method with gratifying results one case in which there were four growths.

Dr. John W. Poucher, of Poughkeepsie, N. Y., had no argument to offer in regard to operative procedure for the removal of papilloma of the bladder, but he wished to suggest something he had tried very successfully in the treatment of urethral caruncle. He had treated urethral caruncle for the last five years with a strong solution of argyrol and had not failed in a single case.

Dr. John W. Keefe, of Providence, R. I., said he was not wedded to the use of the water cystoscope, because he had failed to find tumors in the bladder on account of severe hæmorrhage that occurred at the time it was used. With the air cystoscope these growths could be readily seen.

With reference to the transperitoneal operation it should be performed more oftener than the operation just above the pubes in the prevesical space, especially if the patient was fat. By placing the patient in the Trendelenburg posture one could readily have access to the bladder.

Dr. Louis Frank, of Louisville, stated that tuberculosis of the bladder was exceedingly rare as a primary lesion. It was always secondary to tuberculosis in other portions of the genitourinary tract. So true was this that we could practically always exclude it as a cause of bladder disease. His experience with tumors of the bladder was confined to one or two cases. In these he was able to bring the growth up by the volsella so as to remove it extravesically. The growth was excised, the base cauterized, the bladder wall brought back and immediate closure effected, and a catheter kept in. One patient, who was operated on three years ago, had not had a recurrence. In the other case the tumor of the bladder was complicated or associated with hypernephroma.

Adenocarcinoma of the Kidney.—Dr. J. Garland Sherrill, of Louisville, reported a case of a somewhat rare tumor of the kidney. He mentioned briefly the various forms of renal tumor, especially hypernephromata. In the earlier writings much confusion existed with reference to nomenclature and the descriptions of renal tumors, but recent writings had brought a clearer understanding. Traumatism was mentioned as a factor in the ætiology. Although a history of trauma in a considerable percentage of cases was given, there was no conclusive evidence that it was important in causing the growth. As important symptoms he mentioned hæmaturia, failing health, and pain in the back and loins. The diagnosis of renal tumor was not always easy, and a distinction as to the character of the growth was usually not possible before operation. While the mortality following nephrectomy for malignant disease was higher than for some other lesions demanding such treatment, it should be very low when done early with our present technique. From one half to one per cent. of carcinomata primarily affected the kidney. According to Kelynack, two or three per cent. was a fair proportion of malignant growth of the kidney to malignant disease of other parts. A number of cases were collected from the literature by the writer, two of which were congenital, and in one case a number of calculi were present. Males seemed to suffer almost twice as often as females. Heredity seemed to play no important part in the development of these growths. We had no positive knowledge of the causative factors in the production of these tumors, but it was probable that a large proportion were of congenital origin. A number of cases of injury of the kidney followed by carcinoma had been reported. Although the position of the kidney rendered it especially free from traumatism, in a number of cases traumatism was reported as having caused the first hæmorrhage which called attention to the affection. Calculus had been alleged to be an important causative factor in the production of renal carcinoma, but the question yet remained *sub judice*.

The present mortality of nephrectomy for malignant disease was from eighteen to twenty per cent., which should be reduced, in his opinion, by early diagnosis and prompt intervention. The only hope of recovery lay in early and complete nephrectomy. Partial nephrectomy had been practised at least five times for malignant tumor, according to Morris, but in every case the surgeon thought he was dealing with benign tumors, and the results were not encouraging. In advanced cases palliation was always to be offered to the patient.

The author reported a case in which, through an oblique left lumbar incision, nephrectomy was performed, resulting in recovery. Upon incision through the kidney and growth after its removal, the organ was found to be six inches in length by two and a half by two inches. At the lower pole an irregularly rounded nodular mass was observed. A number of branching vessels were seen on the surface of the tumor. On palpation it was not so resistant as the other portion of the kidney, and a few whitish spots were seen. On section the kidney appeared slightly congested, with a tumor three inches in diameter at the lower pole, apparently encapsulated with infiltration into the parenchyma and also into the fat about the pelvis. Inside the capsule was a grayish white mass of material a little firmer than thick cheese. The remaining portion of the kidney showed some congestion, but the tissue appeared to be almost normal except where the growth was infiltrated through what might be termed the capsule.

Dr. Lewis S. McMurtry, of Louisville, stated with reference to the pathology that it was very doubtful if the analogy between the relation of stones in the gallbladder, stones in the kidney, and the development of malignant disease could be established here. There seemed to be in the kidney, with the presence and irritation of stone, on account of the different character and different function of the tissue, a greater disposition to suppuration than to malignant disease, whereas in the gallbladder we could not regard it as thorough established that the irritation of gallstones was a distinct factor in the development of malignant changes.

The Breast of the Expectant Mother; its Care before and during the Period of Lactation.—Dr. FRANCIS REDER, of St. Louis, said that to prepare a nipple properly the expectant mother was instructed to use soap and water freely. After drying the breast, gentle friction with a rough towel or flesh brush was made for about five minutes. Following this rubbing the nipple was massaged by rolling and kneading it between the fingers, gentle traction being made during these manipulations. The free use of olive oil during the process of massage, which was to be done twice daily, was advised. It was astonishing how an almost hopeless appearing nipple would in a comparatively short time assume the characteristics of a normal one. The application of alcohol and astringent lotions was to be condemned. A nipple cared for with these agents would become hard and inelastic, presenting deep corrugations, which would impede the healing of any excoriation or fissure, should such a lesion occur. The pain accompanying such a lesion brought many hours of suffering to the mother. A nipple prepared by the method of systematic massage would usually withstand the strain of the nursing period without mishap. Its care after the child had begun to suck resolved itself into one of simple cleanliness. Thorough ablutions after each nursing to free it from any accumulated secretions and the liberal dusting with boric acid, which was washed off when the child was put to the breast, were all that was necessary. This régime must be diligently adhered to. The care of the breast was as important as that of the nipple. Its anatomical structure gave evidence of how readily this organ was amenable to culture, if only instituted properly and at the right time. The breast of a healthy girl that did not show development conforming to the incentive given by puberty should, after a lapse of three years, be subjected to the stimulating influences of systematic massage. This massage was to be continued until a normal equipoise had been attained. By developing the breast at this stage of womanhood many of the obstacles pertaining to a normal motherhood might be overcome. The massage in reality was an exercise most simple in character. Placing a breast in the palm of each hand and locking the fingers across the chest, the young woman was asked to walk about in a well aired room, and with a full inspiration force the hands apart. This exercise was to be repeated for at least fifteen minutes daily. It was most conveniently carried out upon rising and before going to bed, and should be continued until satisfactory results showed themselves. The normal breast of the expectant mother should receive some attention as soon as the physiological changes manifested themselves. The breast during the pregnant state did not require the judicious management that it demanded after lactation had established itself; it was of the greatest import, especially if the breast gave evidence of great fulness and tension with tenderness, that the lactiferous ducts be maintained in as patulous and healthful a state as possible. In short, the secretions in the tubes should not be allowed to become stagnant. It had been demonstrated that the *Staphylococcus albus* and also the *Staphylococcus aureus* found entrance into the milk ducts from the skin. That the so called milk fever was the result of these microorganisms having gained entrance into the lactiferous ducts, and having been stimulated into great activity by finding a proper medium in the milk for their propagation, had been to him the only explanation.

Dr. THERESA BANNAN, of Syracuse, N. Y., had been looking for the milk fever which was referred to by the essayist for twenty years in practice and had not found it. The question of the care of the nipple of the expectant mother was of far reaching and tremendous importance. It solved fifty per cent. of the problems of pure milk. It meant the health of the mother and the life not only of the first child, with which most of the difficulties arose, but the lives of all her subsequent children.

Dr. WILLIAM G. DICE, of Toledo, thought it was the general practitioner who was at fault to a great extent. Most patients were willing to take proper care of their breasts if given suitable instruction. He did not recall seeing in his practice more than two cases of abscess of the breast in ten years.

Dr. A. J. RONGY, of New York, thought the term milk fever had been eliminated from obstetrical work. In a record of six thousand cases in both hospital and maternity work he had practically not seen what was known as mastitis, and never cases of suppurative mastitis. It seemed to him that the trouble with these engorged breasts, or with so called milk fever, was in doing too much for the patient rather than doing too little.

Dr. J. H. CARSTENS, of Detroit, was opposed to the application of alcohol or tannic acid and other astringents to the breast. The nipple of the mother should be soft and pliable.

The President's Address: Gynæcology.—The President, Dr. AARON B. MILLER, of Syracuse, N. Y., after speaking of the recent advances that had been made in obstetrics, gynæcology, and abdominal surgery, said the scope of work of the members had gradually increased since the knowledge of bacteriology had illumined the way to a more accurate diagnosis and given them a known pathology. He quoted the prophetic statement made by J. Marion Sims, in 1882, to the effect that it would become possible to open the abdomen in gunshot and stab wounds, to repair and thereby lessen the mortality attending these injuries. In the master mind of Sims the seeds of advancement had taken lodgment. His observations and associations abroad had given him an insight into the possibilities of the future, the possibility of surgery becoming a science, founded on findings that were indisputable. With the advent of bacteriology came a new school of surgeons whose knowledge was founded on facts, not theories, and, like the mariner who consulted his compass, had known laws to direct them. The field of gynæcology, the pelvis, with the abdomen appended, was their hunting ground, and, as with an army marching to victory, the field was soon taken. Now all the organs of these cavities, abdomen and pelvis, had felt the results of advancement and had yielded of their pathology abundantly; and not pathology alone, as the organs of this casket had even been maimed and sacrificed in their healthy state for reasons that at times would have shocked Hippocrates. The knowledge of the real ætiology of disease robbed surgery of its terrors and opened the pelvic and abdominal fields for investigation through a perfected technique, with but little fear of serious consequences attending thorough exploration, thereby revealing the living pathology and rendering the arrest or elimination of disease possible. In the obstetrical art marked results had been obtained through a knowledge of infection. From a heavy death rate following confinement from these causes, the technique carried out in hospital practice had almost eliminated the mortality.

In the field of gynæcology, the disease that stood as a lone sentinel against the advancement of science, yielding not its ætiology, was cancer. Having existed since the early history of medicine, it had withstood all investigation. While all forms of maladies had crumbled in ruins about it, it had continued its ravages until many thousands of people in the United States were dying annually of this disease. Cancer of the breast, recognized and treated in its inception by early operation, had resulted in a greater percentage of cures and materially lessened the mortality. It was the consensus that cancer of the stomach had its origin on the site of an ulcer. Prophylactic treatment prevented the cancer by curing the ulcer. Prophylaxis must be introduced in the prevention of cancer of the uterus by early repair of lacerations.

Reference was made to the havoc caused by gonorrhœa and syphilis. Gynæcologists had been slow to impress upon the public and women especially the great dangers that threatened them through ignorance of these diseases that were liable to be brought to them through unsuspected avenues. This subject had been so enshrouded in mystery that boys and girls had grown to mature manhood and womanhood ignorant of the laws that should govern their lives, for fear that the knowledge of sexual diseases might lead to contamination.

(*To be continued.*)

Letters to the Editor.

A CORRECTION.

105 East Twenty-second Street,
New York, *November 15, 1910.*

To the Editor:

In the *New York Medical Journal* for July 2, 1910, Dr. E. C. Schroeder criticises severely certain paragraphs in the accounts of the annual meeting of the National Association for the Study and Prevention of Tuberculosis which apeared in the *Survey* of May 14th and the *Journal of the Outdoor Life* for June, as well as a bulletin for the press containing an abstract of one of the papers presented to the Pathological Section of the association and issued in advance of the meeting. The criticism refers to the reports of Dr. William H. Park's paper on Types of Tubercle Bacilli as Found in Human Tuberculosis and their Relative Importance, and charges that not only were statements of fact contained in the paper misrepresented, but that conclusions were attributed to the speaker which he had not drawn and which he did not hold.

As the reports in question emanated from the executive office of the National Association, and as they unquestionably contained errors, I beg the privilege of your columns to make certain corrections.

In the reports of the meeting as they appeared in the two journals mentioned it was stated that "Dr. Park demonstrated from a careful study of over 400 cases of tuberculosis of all types chosen at random, that only 2½% of all tuberculosis in New York city comes from infected milk, butter, or meat —that is, from bovine sources," etc. There follows a brief statement of cases described by the author, and it is again repeated that "in a total of 436 persons of all ages examined, only 2½% owed their infection to bovine products."

Dr. Schroeder examines the data presented and shows that they would indicate not 2½ per cent., but more than seven per cent. This point, so far as the exact wording of the report is concerned, is well taken, the explanation of the discrepancy being that there was an inexact reproduction of a sentence in the advance abstract furnished by the author to the National Association, in which it was stated that it was "estimated" that about 2½ per cent. of all tuberculosis in New York city was due to the bovine type of bacilli. Without working over the data it was assumed that the figure in question was based upon the cases reported, although it is evident that other data contributed to the estimate mentioned.

With regard to the advance abstract in a bulletin furnished to the newspaper press in advance of the meeting, Dr. Schroeder criticises sharply and with justice certain statements as well as the tone of the bulletin. The bulletin in question stated, in addition to the inaccuracy mentioned above, that it was pointed out "that the significance of these conclusions will be to direct all the energy of the campaign against tuberculosis to combating the spread of this disease among human beings by preventing spitting, bad housing, overwork, and other conditions bad for the health." It should be stated frankly that Dr. Park did not draw these conclusions, but confined himself entirely to a scientific discussion of the facts which he presented and with which alone he was dealing. He did not concern himself with inferences as to the practical bearing of his studies.

It is perfectly obvious that such a phrase as "direct all the energy of the campaign" is unjustifiable, since a percentage of tuberculosis, whether 2½ per cent., seven, or greater, is of sufficient importance to call for attention and determined action. In other words, it should be admitted frankly that the attribution of inferences to Dr. Park and the somewhat polemic tone of the abstract were out of place.

In explanation it should be said that the newspaper abstract was prepared in a routine way by the Publicity Bureau of the National Association, and, owing to exceptional circumstances existing in the office at the time, was issued without being properly censored. It was simply a misplaced exercise of newspaper instinct for publicity and contained no ulterior motive whatever. Since public protest has been made it seems fitting that a public correction should be offered.

Livingston Farrand,
Executive Secretary.

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Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

A Manual of Toxicology. A Concise Presentation of the Principal Facts Relating to Poisons, with Detailed Directions for the Treatment of Poisoning. Also a Table of Doses of the Principal and Many New Remedies. By Albert H. Brundage, A. M., M. D., Phar. D., M. S., Professor of Toxicology and Physiology in the Department of Medicine, Dentistry, and Pharmacy of Marquette University, etc. Seventh Edition, Revised and Profusely Illustrated. New York: The Henry Harrison Co.; London: Baillière, Tindall, & Cox, 1910. Pp. x-428.

In previous notices of this book we have touched on its availability for emergency consultation. Its handy size and comprehensive scope make it especially useful to the practising physician who is occasionally confronted with a case that calls for speedy treatment. *Multum in parvo* applies with special meaning to this "large book in small compass."

Studies on Immunization and Their Application to the Diagnosis and Treatment of Bacterial Infections. By Sir A. E. Wright, M. D., F. R. S., Director of the Department for Therapeutic Immunization, St. Mary's Hospital, London, W., etc. New York: William Wood & Co., 1910. Pp. xv-490. (Price, $5.)

This volume is composed of the reprinted papers contributed by Sir A. E. Wright and his pupils and colleagues to the periodical medical press during the past twelve or thirteen years. It will be impossible in the limits of this notice to enumerate the titles of the papers here collected. It is well known, however, that Dr. Wright is the most productive worker in the line of vaccine therapy, of therapeutic immunization, and of the study of the protective elements of the normal blood in the English speaking world. Moreover, he is the pioneer in this work in England and a man who has more than once sacrificed his immediate chance for advancement to his enthusiasm for his chosen line of scientific inquiry. That his instincts were right is amply proved by the present status of matters concerning the protective substances in the blood and immunization processes in general, as well as by the most excellent work done by Dr. Wright in the department of therapeutic immunization at St. Mary's Hospital in London.

The papers are grouped in two sections. The first section contains those dealing with the protective elements in the blood; the second part contains those dealing with the problems of the application of the protective substances to the treatment of disease. They are three papers which express the author's present attitude toward the very complicated questions involved and developed by his studies. There are entitled Synopsis of the Principles of Vaccine Therapy and Therapeutic Immunization Generally, Studies in Connection with Therapeutic Immunization, and On Some Points in Connection with Vaccine Therapy and Therapeutic Immunization Generally. These papers are well worth careful perusal by the general practitioner as well as by the specialist.

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M. S., Ph. D., Professor of Physiological Chemistry in the University of Illinois. Third Edition, Revised and Enlarged. With Two Full Page Plates of Absorption Spectra in Colors, Four Additional Full Page Color Plates, and One Hundred and Twenty-seven Figures, of which Twelve are in Colors. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xviii-440. (Price, $2.50.)

In the new edition of this manual, which has been received with so much approval by teachers, the author has added a number of tests and methods, both qualitative and quantitative. As compared with the additions incorporated in the preceding edition, the new material is small, but this is accounted for by the brief period intervening between the publication of the two issues. An especially useful feature of the book is the large number of tests and methods of analysis incorporated.

Die hämatologische Technik. Von Dr. Hermann Schridde, Privatdozent für pathologische Anatomie in Freiburg, und Dr. Otto Naegeli, Privatdozent für innere Medizin in Zürich. Mit 1 Tafel und 20 Abbildungen im Text. Jena: Gustav Fischer, 1910. Pp. vi-135.

This monograph gives directions for the examination of the blood and the blood making organs. The book begins with a description of the methods of obtaining materials for study from animals and from man, the methods of examining fresh preparations and the making of smear preparations and impression preparations, the methods of fixation, of washing fixed preparations, of fixing blood cells for demonstration in sections, for the removal of precipitates from pieces of tissue and sections, for decalcifying, for making frozen sections, for embedding, for staining, for decolorizing, and for staining the parenchyma cells of the blood making tissues. In the second part the methods of examining the blood clinically are described. The collection of the specimens, the making of smear preparations, the making of unstained preparations, vital staining, methods of fixing smears, of staining smears, the special staining methods for fixed preparations, the estimation of the hæmoglobin, the counting of the red blood corpuscles, the determination of the color index, the counting of the white blood corpuscles, the counting and demonstration of the blood platelets, the counting of the leucocytes in dried preparations, the estimation of the leucocytes by staining in the counting chamber, the demonstration of parasites in the blood, the estimation of the specific gravity, the estimation of the dry residue, and viscometry. There is a good colored plate showing the various kinds of cells found in the blood making organs and in the peripheral blood.

Combes's Day Book and Ledger for Physicians. By A. C. COMBES, M. D., Instructor in Diseases of the Mind and Nervous System, Postgraduate Medical School and Hospital, New York, etc. Containing a Daily Record for Six Hundred Different Families in a Year, Each Account for the Entire Year Being by Itself on One Page. Newtown, L. I.: Published by the Author. (Price, $2.)

This is a combination of diary and ledger. The first part is for the list of daily calls and engagements, while the ledger is to contain daily records for 600 different families in a year. It seems to be a very practical book.

The Medical Record Visiting List, or Physicians' Diary, for 1911. New Revised Edition. New York: William Wood & Co., 1911.

This book appears in two sizes, for thirty and sixty patients. It contains the usual diary, memoranda, and records, with such addenda as are of importance for quick references, such as the date of completion of pregnancy; equivalents of temperature, weight, capacity, measures, etc.; maximum doses; drops in fluid drachms; the treatment of poisoning and other emergencies; artificial respiration; signs of death; etc.

MEDICOLITERARY NOTES.

Sir Kenelm Digby thought to curry favor with the court of James I by an attempted refutation of the *Religio Medici.* He was known as a courtier, cook, lover, warrior, alchemist, political intriguer, and man of letters, and would have been more than human to refrain from dabbling in medicine. Consequently he devised a sympathetic powder, which was English vitriol treated with the mystical turnings, grindings, and dryings characteristic of the astrological notions of those days. This powder healed at a distance; a piece of the clothing of a wounded man was dipped into a solution of it, and the invalid's hurts began at once to mend. The usual number of testimonials were received. As patients were advised to discard the uncleanly and greasy ointments used to dress wounds, it is thought that this fact had much to do with the reputation acquired by the powder, which, however, did not survive its inventor.

* * *

"As to the humors of medicine," said Dr. Ben Trovato reminiscently, "there is an old story about a woman who had an abdominal tumor which was found to weigh over eighty pounds after its removal, while the patient herself scaled only some sixty-four pounds. When she was recovering from the anæsthetic she is said to have remarked faintly to the surgeon that she might die happy if she was sure that he would save the growth. This is as remarkable an instance of wit and tumor in our professional archives as I can recall at the moment."

* * *

Golf undoubtedly owes much of its popularity among stout and middle aged men to the fact that it may be played without stooping, an exercise abhorred of the well favored, but indispensable in all other games of ball. A small ball is the oldest of inducements to exercise. Burton cites Galen as recommending *ludum parcæ pilæ;* it exerciseth each part of the body, and doth much good, so that they sweat not too much. Proficiency in football or baseball may soon replace the Latin quotation as the hall mark of a collegian, so that we may paraphrase the saying of Paulus Jovius regarding the English nobility, that apparently they had no other means than hawking and hunting to approve themselves gentlemen with. The entire article on Exercise Rectified, by Burton, might have been written yesterday had we so well informed a scholar to collate the references. The wise have always known of the advantages of exercise and fresh air, but fashion has decreed when and how they were to be enjoyed. Just now we take the air without the exercise, swathed in fur to the point of absolute immobility. The condition of an individual in the tonneau is akin to the hypnotic state.

* * *

An election matters less to the doctor than to any other man; it does not affect the life history or prosperity of the pathological bacteria, nor yet the liquidation of the physician's bill. Patients of the kind that pay continue to pay, and the nonpaying kind retain their explanatory volubility. Republican, Democrat, Independent, Socialist, even the Prohibitionist, look mightily alike in the grasp of fever.

* * *

"It will be easy for the carping critic," said Dr. Ben Trovato, "to take exception to my characterization of the word 'formulæs,' which I find in the pamphlet of a proprietary medicine manufacturer, as a very singular word. Such it is, however, as well as a painful evidence of a growing illiteracy or gross carelessness on the part of the younger generation."

* * *

"Can a disease be disturbed?" asks Madame de Sévigné in one of her delightful letters. "Must not the Providence of God take its course, and can we do aught but obey? All this is most Christian, but let us still take for good measure Monsieur de Lorme's powder." This powder was prepared by heating to redness in a crucible equal parts of antimony, potassium nitrate, and tartaric acid, the product being in fact the long popular tartar emetic. There is no surer proof of the overeating in de Sévigné's day than the gratitude of people for this nauseous drug, which they took in heroic doses. It is not only in America that purgatives have been popular. Lord Byron lauded a heavy dose of salts as far superior to champagne the morning after.

* * *

Thomas Carew, about the best of the Cavalier poets, who held the responsible position of "sewer" to the king, or taster of the royal dishes, has this to say of sickness:

> First it begins upon the womb to wait,
> And doth the unborn child there uncreate;
> Then rocks the cradle where the infant lies,
> Where, ere it fully be alive, it dies;
> It never leaves fond youth, until it have
> Found or an early or a later grave;
> By thousand subtle sleights from heedless man
> It cuts the short allowance of a span;
> And where both sober life and art combine
> To keep it out, age makes them both resign.

In The Case of Helen Bond, in the December *Cosmopolitan,* the author, Arthur B. Reeve, speaks of "one of those long, black hand bags that physicians affect." They are not an affectation, but a necessity, Mr. Reeve. We are pleased to note a great improvement in Miss West's appearance in The Common Law, Mr. Chambers's serial of artist life. It is perfectly awful the way the artists go on in their studios, and some of the language—my! Is the Housewife Guilty? is a timely essay by Sloane Gordon, and it would be well for every châtelaine to heed his advice to keep a scale and a yardstick handy to weigh and measure goods on delivery.

NEW PUBLICATIONS.

Kidd, Frank.—Urinary Surgery A Review. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1910. Pp. xvi-429.

Donahoe, Margaret Frances.—A Manual of Nursing. Illustrated. New York and London: D. Appleton & Co.

Marshall, Francis H. A.—The Physiology of Reproduction. With a Preface by Professor E. A. Schäfer, Sc. D., LL. D., F. R. S., and Contributions by William Cramer Ph. D., D. Sc., and James Lochhead, M. A., M. D., B. Sc., F. R. C. S. E. With Illustrations. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1910. Pp. xvii-706.

Younger, E. G.—Insanity in Every Day Practice. Second Edition, Revised and Enlarged. Chicago: Chicago Medical Book Company, 1910. Pp. viii-124. (Price, $1.25.)

Plimmer, R. H.—Practical Chemistry. With Colored Plate and Other Illustrations in the Text. London, New York, Bombay, and Calcutta: Longmans, Green, & Co., 1910. Pp. viii-270.

Luff, Arthur P., and Candy, Hugh, C. H.—A Manual of Chemistry. Theoretical and Practical. Inorganic and Organic. Adapted to the Requirements of Students of Medicine. With Forty-six Illustrations. New and Enlarged Edition. Chicago: Chicago Medical Book Company, 1910. Pp. xvi-622. (Price, $1.75.)

Bassler, Anthony.—Diseases of the Stomach and Upper Alimentary Tract. Copiously Illustrated with Numerous Half Tones and Line Text Engravings and Fifty-six Full Page Half Tone Plates (With Nearly One Hundred Figures), Plain and in Colors, from Original Photographs and Drawings. Philadelphia: F. A. Davis Company, 1910. Pp. xviii-836.

Greenish, Henry George.—The Microscopical Examination of Foods and Drugs. A Practical Introduction to the Methods Adopted in the Microscopical Examination of Foods and Drugs in the Entire, Crushed, and Powdered States. With 209 Illustrations. Second Edition. P. Blakiston's Son & Co., 1910. Pp. xx-386. (Price, $3.)

Watson, Chalmers.—Food and Feeding in Health and Disease. A Manual of Practical Dietetics. Edinburgh and London: Oliver & Boyd, 1910. Pp. xvi-638.

Gleason, E. B.—A Manual of Diseases of the Nose, Throat, and Ear. Illustrated. Second Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 563. (Price, $2.50.)

Walker, Charles Edward.—Hereditary Characters and their Modes of Transmission. New York: Longmans, Green, & Co.: London: Edward Arnold, 1910. Pp. xii-239. (Price $2.40.)

Vossius A.—Besteht ein ätiologischer Zusammenhang zwischen parenchymatöser Keratitis und Verletzung? Halle a.S.: Carl Marhold, 1910. Pp. 20.

Transactions of the American Climatological Association for the Year 1910. Volume XXVI. Philadelphia: Printed for the Association, 1910. Pp. 231.

Second Annual Report of the Michigan Association for the Prevention and Relief of Tuberculosis, for 1909-1910. Containing a Statement of the Work Accomplished, a Report of the Convention at Ann Arbor, the Report of Local Associations, State Needs, the Report of the Secretary and Treasurer. A Brief of the Year's Work. Pp. 216.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending November 18, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
Austria-Hungary—Hungary, gen'l	Oct. 9-15	76	34
India—Bombay	Oct. 5-11		2
India—Kurrachee	Oct. 2-8	3	2
India—Madras	Oct. 1-7		11
Indo-China—Haipong	Aug. 30		Present
Italy (exclusive of Naples)	Nov. 9-16	80	22
Italy—Naples	Nov. 8	2	1
Java—Batavia	Sept. 25-Oct. 1	8	5
Japan—Kobe	Oct. 2-12	52	42
Japan—Osaka	Oct. 2-10	41	31
Turkey in Asia—Basra	Oct. 20	2	
Turkey in Asia—Zongouldak	Oct. 1-16	43	24
Yellow Fever—Foreign.			
Ecuador—Guayaquil	Oct. 1-15	8	4
Mexico—Campeche	Oct. 30-Nov. 5	1	
Venezuela—Valencia	Oct. 14	3	1
Plague—Foreign.			
Arabia—Aden	Oct. 9-15	2	2
Brazil—Pernambuco	Sept. 19-Oct. 4	4	3
Ecuador—Babahoyo	Oct. 1-15	1	1
Ecuador—Duran	Oct. 1-15	1	2
Ecuador—Guayaquil	Oct. 1-15	83	25
German East Africa—Lindi	Sept. 5	1	1
India—Bombay	Oct. 5-11		16
India—Calcutta	Oct. 18-24		5
India—Kurrachee	Oct. 2-8	8	8
India—Madras	Oct. 1-7		1
Mauritius	July 30-Sept. 1	16	10
Peru—Arequipa, department	Aug. 1-31	1	
Peru—Lambayeque, department	Aug. 1-31	6	2
Peru—Libertad, department	Aug. 1-31	7	4
Peru—Lima, department	Aug. 1-31	18	8
Portugal—Lisbon	Nov. 9		Present
Russia—Odessa	Oct. 9-21	6	3
Turkey in Asia—Beiruth	Aug. 1	1	
Smallpox—United States.			
Alabama—Mobile	Oct. 30-Nov. 1	1	
Arizona—Flagstaff	Oct. 23-29	1	
Florida—Duval County	Oct. 30-Nov. 5	1	
Florida—Osceola County	Oct. 30-Nov. 5	5	
Louisiana—New Orleans	Nov. 2-8	2	
Michigan—Bay County	Oct. 1-31	1	
Michigan—Benzie County	Oct. 1-31	2	
Michigan—Charlevoix County	Oct. 1-31	4	
Michigan—Cheboygan County	Oct. 1-31	1	
Michigan—Crawford County	Oct. 1-31	Estimated 12 to 15 cases	
Michigan—Genesee County	Oct. 1-31	7	
Michigan—Gratiot County	Oct. 1-31	1	
Michigan—Isabella County	Oct. 1-31	1	
Michigan—Lake County	Oct. 1-31	1	
Michigan—Lapeer County	Oct. 1-31	2	1
Michigan—Livingston County	Oct. 1-31	1	
Michigan—Missaukee County	Oct. 1-31	2	
Michigan—Saginaw County, exclusive of Saginaw	Oct. 1-31	7	
Michigan—Saginaw	Oct. 1-31	70	19
Michigan—Wayne County	Oct. 1-31	1	
Minnesota—General	Nov. 1-30		1
Minnesota—Hennepin County	Oct. 17-23	7	
Minnesota—Mower County	Oct. 17-23	2	
Minnesota—Ramsey County	Oct. 3-30	9	
Minnesota—Todd County	Oct. 24-30	1	
Minnesota—Wright County	Oct. 17-23	1	
Missouri—St. Louis	Oct. 30-Nov. 5	1	
New York—General	Sept. 1-30	1	
North Dakota—Bottineau County	Oct. 1-31	2	1
North Dakota—Nelson County	Oct. 1-31	1	
Ohio—Madison County	Oct. 1-31	7	
Ohio—Seneca County	Oct. 1-31	3	
Ohio—Stark County	Oct. 1-31	1	
Pennsylvania—Entire State	Sept. 1-30	6	
Tennessee—Shelby County, exclusive of Memphis	Oct. 1-31	7	
Washington—Pierce Co., Tacoma	Sept. 1-30	2	
Washington—Spokane Co., Spokane	Sept. 1-30	4	
Washington—Walla Walla County	Sept. 1-30	1	
Wisconsin—Green County	Oct. 1-31	3	
Wisconsin—Iowa County	Oct. 1-31	8	
Wisconsin—La Crosse County	Oct. 1-31	1	
Wisconsin—Milwaukee County	Oct. 1-31	1	
Wisconsin—Rock County	Oct. 1-31	1	
Smallpox—Foreign.			
Argentina—Buenos Aires	Aug. 1-31		29
Canada—Halifax	Sept. 30-Nov. 5	1	
Canada—Sydney	Sept. 30-Nov. 5	1	
Chile—Punta Arenas	Sept. 21-27	1	
Germany—General	Oct. 16-22	3	
Hawaii—Honolulu	Nov. 14	1	
India—Madras	Oct. 1-7		1
Peru—Salaverry	Oct. 7-13	3	

Place.	Date.	Cases.	Deaths.
Portugal—Lisbon	Oct. 16-22	21	
Russia—Riga	Oct. 9-22	47	
Russia—St. Petersburg	Oct. 2-22	56	16
Straits Settlements—Singapore	Oct. 16-22	16	5
Switzerland—Zurich, canton	Oct. 16-22	1	

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending November 16, 1910:

Coffee, Joseph H., Acting Assistant Surgeon. Granted ten days' leave of absence from November 5, 1910.

Earle, B. H., Passed Assistant Surgeon. Granted three days' leave of absence en route to station.

Foster, M. H., Passed Assistant Surgeon. Granted seven days' leave of absence from October 3, 1910, under paragraph 191, Service Regulations.

Gassaway, J. M., Surgeon. Leave granted October 14, 1910, amended to twenty-four days from October 7, 1910.

Grubbs, S. B., Passed Assistant Surgeon. Granted twenty-one days' leave of absence from November 7, 1910, on account of sickness.

Hamilton, H. J., Acting Assistant Surgeon. Granted four days' leave of absence from November 4, 1910.

Holt, E. M., Pharmacist. Granted two days' leave of absence from November 7, 1910, under paragraph 210, Service Regulations.

Korn, W. A., Passed Assistant Surgeon. Directed to proceed to Pittsburgh, Pa., upon special temporary duty.

Nydegger, J. A., Surgeon. Granted one month's leave of absence from November 10, 1910, on account of sickness.

Roberts, Norman, Passed Assistant Surgeon. Granted two days' leave of absence from November 7, 1910, under paragraph 191, Service Regulations.

Schuster, B. L., Acting Assistant Surgeon. Granted twenty-two days' leave of absence from November 7, 1910.

Scott, E. B., Pharmacist. Granted four days' leave of absence, without pay, from November 9, 1910.

Smith, F. C., Passed Assistant Surgeon. Granted seven days' leave of absence from November 3, 1910, under paragraph 191, Service Regulations.

Sprague, E. K., Surgeon. Leave of absence granted October 14, 1910, amended to read four days from October 28, 1910.

Spratt, R. D., Passed Assistant Surgeon. Granted seven days' leave of absence from October 1, 1910, under paragraph 191, Service Regulations.

Stier, Carl, Pharmacist. Granted one day's leave of absence, October 31, 1910, under paragraph 210, Service Regulations.

Stuart, A. F., Acting Assistant Surgeon. Leave of absence granted for thirty days from October 1, 1910, amended to read thirty days from October 4th.

Troxler, R. F., Pharmacist. Granted one day's leave of absence, October 30, 1910, under paragraph 210, Service Regulations.

Walker, T. D., Acting Assistant Surgeon. Granted eleven days' leave of absence with pay and one day's leave without pay from November 7, 1910.

Walkley, W. S., Acting Assistant Surgeon. Granted two days' leave of absence from November 4, 1910.

Wetmore, W. O., Acting Assistant Surgeon. Granted two days' leave of absence, October 10 and October 30, 1910, under paragraph 210, Service Regulations.

White, J. H., Surgeon. Granted ten days' leave of absence from November 11, 1910.

White, R. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 7, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 19, 1910:

Davis, W. Cole, Lieutenant, Medical Corps. Left Fort Ethan Allen, Vermont, on ten days' leave of absence.

Dutcher, B. H., Major, Medical Corps. Leave of absence further extended twenty-eight days.

Grubbs, Robert B., Major, Medical Corps. Relieved from duty at Fort McIntosh, Texas, and ordered to Fort Bliss, Texas, for duty.

La Garde, Louis A., Colonel, Medical Corps. Left the Army Medical School, Washington, D. C., on ten days' leave of absence.

Lowe, Thomas S., Lieutenant, Medical Reserve Corps. Left Presidio of Monterey, Cal., for temporary duty at Whipple Barracks, Arizona.

Phillips, Hiram A., Lieutenant, Medical Corps. Ordered to proceed to Fort Andrews, Massachusetts, for duty at that station.

Stone, John H., Major, Medical Corps. Relieved from duty at Fort Sam Houston, Texas, and ordered to Fort McIntosh, Texas, for duty.

Tasker, Arthur N., Lieutenant, Medical Corps. Granted leave of absence for one month and fifteen days.

Walker, Thomas C., Lieutenant, Medical Reserve Corps. leave of absence extended twenty days.

Woodall, William P., Captain, Medical Corps. Left Fort D. A. Russell, Wyo., on fifteen days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 19, 1910:

Shook, F. M., Passed Assistant Surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty at the Naval Hospital, New York, N. Y.

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Births, Marriages, and Deaths.

Married.

Compton—Rixey.—In Charlottesville, Virginia, on Tuesday, November 8th, Dr. Robert F. Compton and Miss Mary Barbour Rixey.

Cook—Bentley.—In Pelham, New York, on Wednesday, November 16th, Dr. Edward Cook and Miss Bertha Bentley, daughter of Dr. Oliver Carlton Bentley.

Urie—Foulke.—In Richmond, Virginia, on Saturday, November 12th, Surgeon John Francis Urie, United States Navy, and Miss Caroline Foulke.

Died.

Austin.—In Imboden, Arkansas, on Wednesday, November 2d, Dr. B. F. Austin, aged seventy-seven years.

Berger.—In Lebanon, Illinois, on Thursday, November 10th, Dr. Adolph Berger, aged eighty-nine years.

Blair.—In Chicoutimi, Quebec, on Wednesday, November 9th, Dr. Robert Crammond Blair, aged seventy-one years.

Boorn.—In Schenevus, New York, on Monday, November 7th, Dr. Henry W. Boorn, aged seventy years.

Burgtorf.—In New York, on Monday, November 14th, Dr. Theodore R. Burgtorf, aged fifty-five years.

Jackson.—In Oakfield, New York, on Wednesday, November 9th, Dr. Albert Payson Jackson, aged sixty-eight years.

Knickerbocker.—In Watertown, New York, on Tuesday, November 8th, Dr. Hubert DeLancey Knickerbocker, aged forty-three years.

Linville.—In New Castle, Pennsylvania, on Monday, November 14th, Dr. Montgomery Linville, aged fifty-six years.

McNeil.—In Saginaw, Michigan, on Sunday, November 6th, Dr. William J. McNeil.

Miner.—In Edgewater, Colorado, on Saturday, November 12th, Dr. Harriet Asenath Miner.

O'Callaghan.—In Philadelphia, on Sunday, November 13th, Dr. Daniel O'Callaghan, aged seventy-one years.

O'Hara.—In Lynchburg, Virginia, on Sunday, November 13th, Dr. Robert G. O'Hara.

Price.—In Harrodsburg, Kentucky, on Friday, November 11th, Dr. A. D. Price.

Rodgers.—In Stanton, Virginia, on Monday, November 14th, Dr. Charles W. Rodgers, aged fifty years.

Shanklin.—In Pueblo, Colorado, on Friday, November 11th, Dr. Leslie Shanklin, aged thirty-three years.

Sowers.—In Warrenton, Virginia, on Thursday, November 10th, Dr. James Richard Sowers, aged sixty-four years.

Waggener.—In Brookline, Massachusetts, on Thursday, November 17th, Medical Director James R. Waggener, United States Navy, retired, aged sixty-four years.

White.—In Rutherford, New Jersey, on Thursday, November 10th, Dr. Ezra M. White, aged sixty-five years.

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Original Communications.

IODINE,

The Ideal Surgical Antiseptic.

BY MAJOR FRANK T. WOODBURY,
Medical Corps, United States Army,
Fort Assinniboine, Montana.

Since reporting in January, 1910, a new method of procedure in surgical technique by means of tincture of iodine, the author and his assistant, Lieutenant J. A. Hayne, Medical Reserve Corps, have had a number of cases that so thoroughly establish this drug as the ideal surgical antiseptic that he desires to report some of them to the readers of the *Journal.*

CASE I. Mrs. E. K.; age thirty-four, a primipara, was delivered April 9th of a dead child, by a high forceps operation, after a very protracted and difficult labor. The patient was referred to the writer in consultation and was admitted to the Post Hospital April 10th, when she was operated upon for retained placenta, a severe laceration of the perinæum almost down to the sphincter and into both fornices and slightly lateral laceration of the os uteri.

The patient was chloroformed, the instruments boiled, the writer and his assistant sterilized their hands by dipping them into tincture of iodine, and the uterus and vagina were thoroughly irrigated with a solution of a teaspoonful of tincture of iodine in a quart of normal salt solution at 105° F. The placenta was removed manually from its adherent position in the fundus. The uterus and perineal wounds were mopped with full strength tincture of iodine. The lacerations were repaired with silkworm gut dipped in the tincture and the uterus and vagina were again irrigated with iodine salt solution. The patient rallied promptly without notable symptoms and received twice daily the iodine salt solution as a douche. The temperature the day of the operation was 100° F., but was normal the next day and thereafter. She went home on the fifth day after the operation, the stitches were removed on the tenth day, and on the twenty-first day the patient was doing ordinary housework. The wounds healed as promptly as though they were skin scratches with excellent anatomical and cosmetic results, and now six months later the perinæum is as sound as before the accouchement.

CASE II. J. E. C.; a soldier, aged twenty-nine, sustained a lateral dislocation of the left knee with severe laceration of the internal lateral and capsular ligaments. He was admitted to the Post Hospital May 12th and was put to bed with hot fomentations and splints. On June 3d it was decided to operate to relieve the lateral luxation which prevented standing on the leg. Under chloroform the joint was opened by the usual curved incision on the inner aspect. The joint was explored with the finger, but seemed normal, so the internal lateral and capsular ligaments were freshened and sutured, overlapping each other, with kangaroo tendon. The skin incision was closed with silkworm gut. Tincture of iodine was used in this case for sterilizing the hands of the surgeons, the area of operation, the depth of the wound, the suture material, and the completed line of suture. A dry dressing was applied with bandages. The convalescence was rapid and continuous without pain or fever. On the eleventh day after the operation the accompanying picture (Fig. 1) was taken, the patient then going about on crutches. Since July he has done company duty except those exercises requiring full flexion of the knee, which is steadily becoming more supple.

CASE III. J. O'C.; a soldier, age forty-eight, with a bad alcoholic history and albuminuria, was admitted to the Post Hospital, June 12th, with severe abdominal cramps On June 13th the condition was diagnosticated as acute intestinal obstruction, and the patient was operated upon at 2:15 p. m. (anæsthetic, chloroform). The abdomen though very hairy was not prepared further than mopping it over with tincture of iodine. The surgeons' hands were dipped in the tincture and an incision was made from the umbilicus to two inches above the pubes. The peritonæum bulged up and when knicked a considerable quantity of ascitic fluid welled forth. The small intestine was chocolate color and motionless for about one yard. A constricting point, feeling like gristle, was found deep down to the left of the spine. This was separated with difficulty by most careful digital manipulation, leaving several bleeding areas. The strangled gut was so friable that one mesenteric vessel ruptured and bled profusely. This was ligated with fine silk and every bleeding spot and the stump of the diverticulum, which had been ligated and severed, were mopped with the tincture of iodine. The intestines, after a few moments' application of hot damp towels, resumed their normal color and peristalsis. The abdominal wound was closed layer by layer with silk sutures and applications of the tincture of iodine, the skin with silkworm gut.

It should here be noted that the drug is mopped on leaving a dry surface as it is styptic and any excess may cause pain or annoyance later.

The patient rallied well and was given continuous enteroclysis during the night. The temperature at 6 p. m. was 100.2° F. and pulse 110. The patient sat up in a rolling chair within twenty hours after the operation (Fig. 2) and made an uneventful recovery. The pulse and temperature were normal the third morning and his diet was restricted only by his own appetite. He sat up every day in a chair until fatigued, and on the tenth day after the operation the stitches were removed and he was dressed, out of bed, and required to walk around. On July 2d he went to his company quarters, and at present, three months after the operation, he is in robust health. This case is interesting because it shows how iodine is borne by the peritonæum and how convalescence is almost magical when iodine stays infection.

CASE IV. W. D.; a soldier, aged twenty-four, received a severe crush on the left leg above the ankle, causing a compound comminuted fracture of both bones of the leg from being run over by a heavily loaded army baggage wagon on a practice march. He was taken at once to the Columbus Hospital in Great Falls, ten miles across the prairie, in the military ambulance. He was chloroformed and a Hospital Corps sergeant held the foot while the writer removed the clothing and shoe. A very nasty wound was found with about three inches of tibia crossways in the leg, the soft parts much mashed and there were numerous splinters of bone. The foot was warm and circulation good. The operator in his service uniform washed some of the prairie dust from his hands and dipping them in tincture of iodine explored the wound. The sergeant held the foot in extension in the axis of the leg and the surgeon refitted the broken fragment of the tibia in place, brought the splintered ends of the fibula in approximate apposition, and removed the splinters and shreds of flesh. Several long tension sutures were applied to ap-

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proximate the severed muscles and the wound was thoroughly mopped out with tincture of iodine. No other procedures were attempted as the tissues were too much damaged to sustain any manipulation and wiring the bones would undoubtedly have caused extensive necrosis. Instead a posterior wire splint was applied with plaster of Paris reinforcement and a large anterior fenestrum while the bones were held in alignment by the steady traction on the foot. A dry dressing to absorb the expected copious oozing of serum was applied.

The patient rallied promptly, did not need a narcotic that night, and ate the usual full diet of the hospital. His temperature did not go above 99.3° F. at any time, and the following evening he was taken across town in the army ambulance and put on a train for Fort Assinniboine, which he reached in about eight hours. Here he was treated by Lieutenant J. A. Hayne, M. R. C., in the Post Hospital, who continued the iodine treatment. The patient's temperature on arrival was 100° F., but dropped to normal the following day and remained so. The wound was irrigated daily with the iodine salt solution. It was noticed that the chemical reaction with the discharges and the cast had produced iodoform. The leg was then removed from the cast and treated in a fracture box. When sloughing had ceased, a fenestrated soluble glass splint was put on. As soon as the sloughing had ceased repair was rapid and there was at no time after the operation any sign of suppuration, fever, or pain. Eight weeks after the accident the leg was the same length as its fellow, the wound was entirely healed over, the lower end of the fragment had united by firm union, but the upper end, which was exposed in the wound for nearly six weeks, showed a very good fibrous union, which will now be stimulated by passive motion and hot and cold applications daily. The cast has been replaced by a posterior felt splint, the shoe of the other foot has been raised three lifts, and the patient is now urged to go about on crutches and try moving the foot himself. The constant confinement in splints has stiffened the ankle, which will probably require active massage later.

CASE V. J. H., a soldier, age twenty-three, while on a practice march had the pulp of four fingers almost torn off by being caught in a wagon chain. The fingers were washed with water and the wounds mopped with tincture of iodine and the mashed tissues replaced. Daily treatment with the iodine during the march resulted in primary union with but slight scarring.

CASE VI. H. F., a carpenter, received a slight wound of a finger while working and treated it himself. Later his arm became sore and he applied home made poultices. When he could stand the pain no longer he applied to Dr. Hayne for relief, with a temperature of 103° F., sweats, chills, and a tremendously swollen right elbow and forearm. Under cocaine anæsthesia (two per cent.) the arm was mopped liberally with iodine and a four inch spiral incision was made over the elbow down to the humerus and ulna, evacuating some pus from the epitrochlear glands and lymphatics. The wound was irrigated with the iodine salt solution and drained with strips of gauze wet in the same solution. The temperature just after the operation was 103.5° F. Six hours later it was normal and remained so. The patient carried his arm in a sling coming to the hospital daily for irrigations for four days, and ten days after the incision he resumed his duties as carpenter with perfect function in arm and elbow.

There have also been six cases of ingrown toenail, treated by the usual excision of the offending border with its matrix, where the toes were not even washed but mopped before and after the excision with iodine. In every case healing by primary union took place without sign of infection, and the patients returned to duty within ten days; a result hitherto impossible with any other form of treatment.

The writer believes that iodine is the long desired ideal disinfectant and antiseptic. It is cheap, easily obtainable, can be carried in small bulk, is efficient in high dilution, does not damage tissue even where its vitality has been much reduced by traumatism or infection, it has been invariably successful as a germicide under all conditions when the drug and the germs have been brought together, and though it has great powers of tissue penetration the writer has yet to see a case of poisoning even when it was mopped in full strength on the peritonæum and in the parturient uterus. It can be used to disinfect the area of operation without previous preparation; to sterilize instruments, suture material, dressings, and the hands of the surgeon, during the time that the patient is going under the anæsthetic. It may be said here that the writer prefers to boil his instruments when he can, as the continued use of iodine tarnishes and affects the cutting edges requiring whetting often, though the same in a lesser degree may be said for the soda solution.

The writer uses it entirely to prepare his hands and finds it rarely causes irritation. It can be removed from the hands by boiled or raw starch, ammonia water, or the aromatic spirit of ammonia, hydrogen peroxide, Fowler's solution, or ether. It is advisable where long periods of operating are expected, to dip the hands in iodine and immediately decolorize with ammonia; rubber finger cots or rubber gloves may be slipped on, and then redipped in the iodine. This is merely to protect the operator's hands from being dyed a deep brown, which is almost impossible to get rid of, especially when the tincture is reapplied every one or two days.

The solution of one teaspoonful of the tincture to the quart of physiological salt solution is, roughly, a dilution of seven milligrammes in one hundred cubic centimetres, or .007 per cent., and in this strength is most efficacious as an irrigation in all inflammatory and catarrhal conditions of mucous membrane. It can be used in the eye for the ordinary forms of conjunctivitis with prompt improvement. The writer has not had an opportunity to use it in gonorrhœal ophthalmia, but as he has found it to be very efficacious in acute urethral gonorrhœa in twice and three times this strength he believes it may have some value here and is desirous of hearing from any who has or intends to try it in this condition. When a case of mumps developed in a company of infantry this solution was supplied to the company to be used copiously as a gargle for several days. No other case of mumps developed. It is a routine treatment for all acute throat affections, and in cases of amygdalitis the tonsils are also mopped once daily with the tincture and Bier's treatment with a rubber bandage around the throat has cut down the illness to an average of five days on sick report. It will promptly abort colds when used as a spray.

The iodine salt solution is excellent in cystitis, acute and chronic, and catheters kept in the tincture and then transferred to this solution just before use are sterile, nonirritant, and perfectly pliable.

The troublesome cases of chancroids with suppurative inguinal adenitis which drag along in hospital for so many weeks are now rapidly hurried to convalescence by a vigorous pursuit with the tincture. Buboes which have already broken down promptly become healthy granulating wounds and heal up without further trouble.

Tincture of iodine is the most valuable drug that railroad and military surgeons can have, and the writer always takes a quart of it, in two bottles, whenever serving with troops in the field. An open prairie or a nipa thatched shack will show as good results, provided you have a good surgeon and tincture of iodine, as the finest marble lined operating pavilion served by the most scrupulous followers of Lister. In fact it may be said that to have an infection in a clean wound made by the surgeon's knife, as for instance a herniotomy, is an evidence of gross carelessness or utter incompetence.

Senn, Jewett, Grossich, Bernucci, and others have reported the use of iodine as a disinfectant of the skin in the area of operation, and Bernucci reports the use of iodine, in a paper later than the writer's, as a disinfectant for the surgeon's hands. The writer believes that as he has practised this method since 1906 he is the first to have introduced this method, at least in American surgery. His first reported case, a successful Cæsarean section on a native of the Island of Samar and performed in an old nipa thatched shack, was read before the Manila Medical Society in the winter of 1906 and printed in the *New York Medical Journal* of May, 1907. Since then he has further perfected his technique, but the fundamental use of tincture of iodine in the wound and on the suture material and its use as a post partum douche was first reported in this case.

As the writer advocates its use, based on experience, as the sole antiseptic throughout operations for sterilizing hands, instruments, and suture material (at the time of operation without previous preparation), and for its local application in the full strength of the tincture throughout the extent of all wounds and suppurative cavities and on every raw surface infected or likely to be infected, and as an irrigation, in varying, suitable strengths, in all phlogistic conditions where the drug may be brought in contact with the bacterial cause, and as he cannot find in standard textbooks on pharmacology and therapeutics and surgery any reference to iodine as an antiseptic except in a vague way as being liberated from iodoform in the cavities of tuberculous abscesses or as used in the Claudius method of preparing catgut, he believes that he is the first to introduce this very valuable action of iodine to the profession.

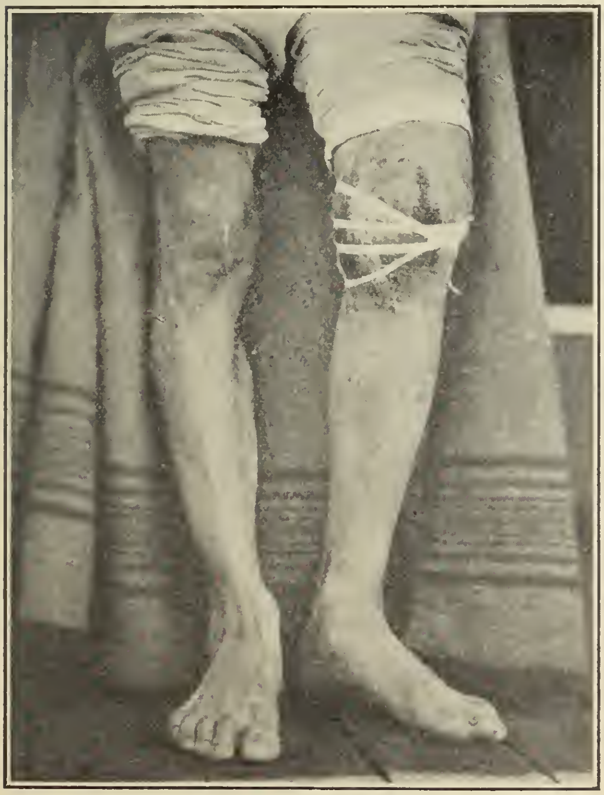

Fig. 1.—Eleven days after exploratory arthrotomy and repair of lacerated internal lateral and capsular ligaments.

Fig. 2.—Twenty hours after laparotomy for acute intestinal obstruction due to volvulus from inflammatory adhesions of Meckel's diverticulum.

"CONCERNING THE PROTEST, BY THE COMMITTEE REPRESENTING VARIOUS WOMEN'S CLUBS, AGAINST PARAGRAPH 79 OF THE BILL RELATING TO THE PROCEDURES OF THE LOWER COURTS OF THE CITY OF NEW YORK."

By Frederic Bierhoff, M. D.,
New York.

It was to be expected that the passage of the paragraph in question would be followed by protests from all of those who oppose any and all attempts to interfere with the rights of the individual—even though these be opposed to the rights of the community—and particularly from those who see in the measure an attempt to discriminate against the female.

In the past few weeks a pamphlet has been circulated, by the representatives of various women's associations, which contains a protest against paragraph 79, and gives what purport to be arguments in favor of a repeal of the paragraph in question.

As one of those who appeared before the Page Commission, and whose data, given to the Commission (published, in their completed form in another issue of this *Journal*), may have helped toward the passage of the paragraph in question, I feel called upon to discuss this protest, from the standpoint of those who see a grave menace to the health of the community in the continuance of the policy of noninterference with the activities of those indiscriminate spreaders of venereal diseases—the individuals whom the paragraph hits—and who feel that the arguments advanced in support of the protest, are based upon misconceptions or misinformation.

It is not within the province of the physician to discuss the constitutionality of the measure. That is for the judiciary officers of the community to decide. I believe, however, in view of the power of the Board of Health to seize and incarcerate any infected individual, whose being at large and in the position to spread disease may make that individual a menace to the health of the community, that the measure will be found to be constitutional.

Nor is it within the physician's province to decide upon the morals of the measure.

When, however, any body of men, or women, discuss the sanitary aspects of the question, and present arguments in support of their contentions, which another feels to be fallacious, then it is the duty of those who know them to be an error, to protest against their acceptance as truths by the community.

Within the past five years, I have personally studied the problem of the possibility of a sanitary control of prostitution, both in this city and many of the larger cities of Europe. As a result of these studies, I do not hesitate to say that, in those cities in which there is no control, the evils resulting from prostitution are greater than in those cities in which a rigid control is exercised.

The claims of the opponents of sanitary control—that the examinations of prostitutes and the incarceration of those found to be infected have not checked the spread of venereal disease—prove nothing except that the methods of examination and treatment, which have been employed, have been insufficient. In all of my investigations, I have found but one city, in which they were all that modern medical knowledge has the right to demand—the city of Dresden—and I shall, further on in this article, refer to the results there achieved. Until the other cities, employing measures for the sanitary control of prostitution, shall have given a full and fair trial to the most modern and most scientific methods for the detection and treatment of venereal diseases, it must continue to be unfair to the supporters of sanitary control, to use the poor results obtained as an argument against the attempts to introduce methods which can, *when properly carried out*, achieve so much of good.

Let me take up the arguments advanced by the protestants, in support of their statements. The first, quotes a statement by Morrow: "It is a great mistake to suppose that the prostitute is the chief agent in the spread of venereal disease; the spread of these diseases in the homes, and families, is practically always through the agency of the man."

It would be interesting to learn what were the investigations upon which Morrow based the first statement. As a result of my own investigations, covering a period of more than ten years, I have come to the conclusion that, in this city as in others, *by far the large majority of venereal infections* are transmitted by the common prostitute, whether she be classed as "public," or as "clandestine" prostitute. Let it be said here, that the writer understands, under the designation "prostitute," any female who, for a financial consideration, or its equivalent, cohabits with a number of males.

In the second half of the statement, I take exception to the words "practically always." Who can tell definitely, what percentage of venereal disease, in the female, is due to prenuptial or extramarital infection? I believe it to be much greater than is usually supposed. In the determination of questions like the present, we may not confine our investigations to one class of society. We must study it as it affects *all* classes.

The second argument, also a quotation from Morrow, says: "This system (regulation by medical examination) has proved to be defective as a sanitary scheme. One defect was to consider the public prostitute as the chief or only source of contagion. It failed to reach the large body of private or clandestine prostitutes who are the most dangerous sources of contagion. Its fatal weakness was to ignore the masculine spreader of the contagion—as well attempt to prevent the importation of infectious diseases from a plague infected vessel by quarantining the infected women while permitting the infected men to go free."

Why have the attempts at sanitary regulation of prostitution, by means of medical examinations, proven ineffective?

First, because the definition of the term "professional prostitute" has been so loosely construed. In the German speaking countries—the principal ones to try the plan for a sanitary control—no woman can be classed as a professional prostitute (*Gewerbsmässige Prostituierte*) if she can prove that she derives any part of her earnings from labor other than prostitution. Only the woman *wholly dependent* upon prostitution for her income can be so classed. It is this provision of the law which permits the majority of women to escape the control, even when they are notorious prostitutes; and, therefore, to bring about the fact that so large a proportion of venereal infections are, in foreign countries, to be ascribed to the "clandestine" prostitute. They are "common prostitutes," and are "clandestine" only in the eyes of the police, since they cannot be brought under the regulations.

Secondly, because of the diversity in the methods of examination and treatment of those women who come under the police control, in the different cities, or countries. Were they all alike, then comparisons might be justified.

Thirdly, because of the antiquated character of the methods of examination and treatment employed in many of the cities.

Why has the male been ignored, as a factor in the spreading of venereal disease?

First, because our laws are, as yet, not sufficiently enlightened to enable us to put the venereal diseases upon the list of "notifiable diseases," as we do with the majority of the other contagious diseases. When we are enabled to do this, it will become possible to take greater cognizance of the male source of contagion.

Secondly, because, owing to purely physical reasons, the male is *less of a factor* in the spreading of venereal diseases than is the female, since he is far less likely to cohabit during the active stage of any venereal disease. Experience has shown that, while but a small percentage of males will do so, the large majority of prostitutes will continue their indiscriminate cohabitation throughout their illness, unless forcibly prevented, by incarceration in a hospital or prison. Furthermore, while, on the average, coitus at weekly, or bi-weekly intervals, is, perhaps, a fair average for the unmarried male, during the period of active sexual life, the public prostitute cohabits with anywhere from one to forty males, in the course of the day. Compare, then, the relative possibilities of the transmission of venereal diseases, between the male and the female. We must not forget that the public prostitute is a *wilful spreader of infection,* in that she persists in her activities even after she knows herself to be diseased.

If the police knew that a crime of incendiarism, or theft, or murder had been committed by a man and a woman, and had succeeded in laying hands only upon the woman, would they be justified in releasing her only because they could not also lay hands upon the man? If of two cases of cholera, or plague—one a man, the other a woman—the quarantine authorities had succeeded in laying hands only upon the woman, would they be justified in releasing her, to spread contagion broadcast, only because they had not succeeded in arresting the man?

The third argument, also a quotation from the same author's statements, touches upon the inability to absolutely check the spread of venereal diseases, and claims that the one-sidedness of sanitary preventive measures is opposed to the principles of equity and justice.

So long as prostitution exists, just so long will venereal diseases be spread. All attempts, which have hitherto been made, to eradicate prostitution, have been complete failures, in every sense. Rational human beings realize that they cannot entirely eradicate prostitution, and that, therefore, they cannot entirely eradicate venereal diseases. But the consciousness that we cannot *entirely* stamp out a disease does not justify us in completely ignoring the existence thereof, nor does it stamp as irrational any intelligent attempt to check, even if only in part, its spread, or its ravages.

The fourth argument is a quotation of statements by Kally, giving as his reasons against the medical examination of prostitutes: "1. Of two propagators of disease you treat only one. 2. Impossible to get more than a small number of women, for, however strict the regulations, they evade them in every possible way. 3. Impossible to examine any large number often enough to prevent disease from spreading."

When women succeed in evading the regulations, it is because they are shrewder, or more tricky, than the officials set to catch them. The remedy would be to appoint *brighter officials.*

The question of making sufficiently frequent examinations of a small or a large number of individuals, is chiefly one of the money necessary to employ sufficient examiners.

Argument No. 5, by Fiaux, states: "If the women are syphilized, it is because men have syphilized them; man is the ambulant carrier of the poison." This reminds one of the question: "Which was first, the hen or the egg?" It might be said that the converse of Fiaux's statement is also true, and that, if men are syphilized, it is because women have syphilized them. It takes two, also, to make the venereal bargain. There will always be women who will, for money, or its equivalent, prostitute themselves.

Arguments 6 to 11, and also 13, 14, 15, and 16 are similar, in their tenor, to those which have preceded.

Argument No. 12 is a quotation from the Brussels Conference of 1899 (author not cited), and states: "The clandestines and minors are the most dangerous as regards syphilis, while gonorrhœa may be repeatedly contracted by even the oldest prostitute;—may be undetected in examination, and may be uncured after treatment."

If clandestines and minors are more dangerous than the public prostitute, as regards syphilis, then this may well be due to the fact that the last mentioned, when found to be syphilitic, is, for the period of time consumed by her treatment, removed to a workhouse hospital. It would seem to me that this is an *argument for* rather than against sanitary control.

That gonorrhœa may be repeatedly contracted by even the oldest prostitute, is, unfortunately, true, since gonorrhœa does not, like syphilis, produce immunization. All the more reason, then, why even the oldest prostitute should be repeatedly examined, to detect the presence of gonorrhœa.

It is a question whether gonorrhœa need ever escape detection, when a competent, properly equipped examiner does the work. Certainly a gonorrhœa capable of transmission should rarely, if ever, escape detection. It is perfectly true that it may, in a small proportion of such cases, require repeated examinations to detect the germ. When a gonorrhœal infection escapes detection, it is usually due to an incompetent examiner, or an insufficient examination,—or both.

If gonorrhœa remains uncured, after treatment, it is because of incorrect, or insufficient treatment. It is perfectly true that a large proportion of the cases of gonorrhœa under treatment remains uncured. That is the fault of the treatment, however, and is not proof that the disease is incurable.

The next subdivision is headed by the statement: "Syphilis and gonorrhœa are both capable of transmission by ordinary contact, thus the isolation of convicted prostitutes, a few at a time, is futile from the sanitary standpoint.

Paragraphs 17 to 23, which are advanced in support of the above, all emphasize the great danger of infection with syphilis, through non-venereal contact. It seems to me that the truth of these statements, in this respect, should prove, all the more, the need to proceed vigorously against the known spreaders of infection,—particularly through venereal contact,—since they make possible the non-venereal infections.

Every infected prostitute, who is removed from her sphere of activity for the time necessary for adequate treatment of her disease, means a number of transmissions of infections prevented during the period of her incarceration. If treated for gonorrhœa, or chancroid, until cured, she is prevented from spreading these diseases until she herself again becomes infected with them. If syphilitic, then, under the terms of paragraph 79, she may be held for a period up to one year, for treatment of her syphilis. Even if, during this time, she cannot be *definitely cured,* she can be prevented from doing almost incalculable harm, and, furthermore, as a result of proper treatment, the danger of her transmitting the disease, after her release, may, also, be greatly diminished.

Should the new remedy, Ehrlich's 606, prove effective, as it gives every evidence of doing, then the term of incarceration of the syphilitic prostitute might be very greatly reduced, and a cure would seem possible.

Paragraphs 24 to 30 refer to the difficulty—even impossibility—of making an accurate diagnosis in all of these cases at the first examination.

It used to be true that, owing to imperfections in technique, and to the fact that we did not know the specific germ of these diseases, an accurate diagnosis was impossible. At the present time, thanks to recent discoveries, it is possible—when the microscopical examinations and the blood tests are in *competent* hands—to make an accurate diagnosis in the large majority of cases, at the first examination, and in a comparatively short time. And where the condition is such that a diagnosis cannot be made—when competent examiners only, specially trained in the methods for the detection of these diseases, make the examination—it is certainly such that no great damage can be done if the question is left open for a few days, and if the prostitute under suspicion is held for observation during this time—all that would be necessary to permit the making of further examinations.

The great desideratum, however, is the appointment only of examiners who are *properly qualified for the work.*

With the object in view that the sense of modesty of the women arrested for prostitution might not be shocked by their subjection to an examination by a male examiner—and in order to avoid this favorite argument of the opponents of control—the framers of the new law wisely provided that the examinations be made by female physicians. Whether these examiners prove equal to the task, is a matter that remains to be seen. It is a peculiar fact, however, that the prostitutes, in foreign countries, prefer to be examined by male physicians.

Paragraphs 31 to 53 refer to the fact that practically all prostitutes are, sooner or later, infected with venereal disease; that cases supposed to be cured are only partially so, and, therefore, still infectious, and that the infective period of these latent cases may extend over many years.

These statements should be used as arguments in *favor* of a sanitary control, rather than against it.

It is true that almost all common prostitutes are venereally infected, within from one to three years after beginning their career.

It is true that very many cases are improperly or imperfectly treated, and are still infectious while believing themselves to be cured.

It is also true that the infection may last for years.

Where lies the fault? With the physician as often as with the patient. But with the *teachers* of medicine more than with the practitioners. Few men enter the practice of medicine with an adequate knowledge of venereal diseases. Few occupants of chairs at our medical schools give their students a scientific, up to date course of instruction in the methods of diagnosis and treatment of these diseases. Ribald jokes can never compensate students for imperfections in teaching. The recent great advances in modern medicine entitle us to demand of our medical schools that their courses of instruction keep abreast of these advances. When our medical students and practitioners are properly instructed in the methods of detecting and coping with these diseases, then there will be fewer cases of latent infection and mediate contagion. In the case of gonorrhœa, nonvenereal infection is a rarity, except in the case of infants.

Paragraphs 54 to 60 present arguments in objection to the forced detention of the venereally infected in hospitals, and in favor of their free treatment.

I, too, should prefer to see them treated free, in our hospitals and dispensaries, and have repeatedly urged this measure. Let us see, however, how the question stands, in this regard, in this city. At present there are 49 general hospitals in the Greater City of New York. Of these, outside of the hospitals of the Department of Charities, and Bellevue Hospital itself, only the German, Mt. Sinai, Lincoln, Postgraduate, Philanthropin, Red Cross, St. Mark's, Sydenham, and Williamsburgh hospitals admit nonpaying venereal patients to their wards at all.

Of 10,536 hospital beds, in the same territory, only about 400 are *at all open to venereal patients.* Not, by any means, reserved for them, but for all diseases of the genitourinary organs, and for skin diseases as well. Of these beds, 336 are in municipal institutions. *And this in a city of almost five millions of inhabitants!*

It should be made compulsory for every hospital receiving financial aid from the city to admit to its wards patients suffering with venereal diseases. The institutions already admitting them have sufficiently proven that it is possible, with adequate precautions, to prevent the spread of the contagion to others. Were the general hospitals opened to venereal sufferers, the need for the incarceration of the prostitutes might be lessened.

The opponents of sanitary control must not forget that, in the majority of instances, the common "street-walker"—and it is with this class that we have chiefly to deal—will not voluntarily submit herself to hospital or dispensary treatment for a time sufficiently long to permit a cure to be made, if that treatment keeps her long away from her business. Therefore, to make an adequate treatment of these individuals possible, they should, when found to be diseased, be committed to a hospital institution, as the present law provides.

Not every infected prostitute can be arrested and sent away, any more than could every solitary case of any other infectious disease. However, it may be held to be true in these as in all other infectious diseases, that every infected individual removed from the possibility of transmitting the disease to others, means the removal of just so much of a menace to the health and welfare of the community.

Paragraphs 61 to 63 pretend to see, in the provision that no convicted prostitute found to be diseased may be released from the hospital to which she has been sentenced until after "the certificate of a physician of such institution, or of the Department of Health that the prisoner is free of any venereal disease which is contagious, infectious, or communicable," a license to practise prostitution, and a certificate of safety for the debauché.

That is untrue. The provision, it is true, is forced to rely, for its effectiveness, upon the competency and the honesty of the examining officials. *It is intended to prevent the premature release of individuals still capable of transmitting disease,* and can in no way be honestly construed into a license. It is primarily and solely a safeguard for the community.

The certificate is to the court, and not to the individual. It forms a part of the court records of the case, and does not become the property of the released prostitute. Therefore she can make no use of it.

Paragraphs 64 to 81 refer to the failure of "police regulation" of prostitution, and see, in this bill, a beginning of a regulation system.

In view of the utter inability to secure accurate data concerning the prevalence of venereal diseases, in any city or country, all statements concerning the value or lack of value of "police regulation" of prostitution must be accepted as unauthoritative statements, based solely upon individual opinions. And these opinions are, almost invariably, based upon the individual's attitude with reference to regulation, or abolition, rather than upon personal study of the problems themselves.

It must be conceded that police regulation, as it is carried out in foreign countries, must result in an increase in clandestine prostitution, because the measures employed in these countries are *purely* police measures, and *not* employed primarily as sanitary measures. It is the *police* side of the question which is uppermost, and that is the feature most feared and hated by the prostitutes.

And yet, if one compares those cities in which the prostitutes are segregated with those in which this is not the case, one is quickly impressed with the freedom from flagrant solicitation upon the streets in the former.

Again, in each city, there are different regulations, and different methods of examination—and treatment—and these not always such as modern science has the right to demand. Even if they were all alike—as they should be—it would take a number of years before any *definite* statement could be made with regard to their actual value.

The problem is one which cannot be solved in a day, or a year. It will require many years of earnest effort to make even an impression upon the evil; but that fact does not justify us in ignoring the fearful toll annually exacted from the community by venereal diseases. Even if we can only decrease it by a little, we shall have done something of benefit.

The present policy of ignoring the existence of the problem has been responsible for the steady increase of disease and suffering.

The opponents of the bill offer no substitute which takes these facts into consideration.

Paragraphs 82 to 92 draw attention, very correctly, to the fearful extent and the terrible ravages of venereal diseases; yet the opponents of the bill seem to see therein an argument against the bill, because it cannot hope to absolutely eradicate the evils which it was intended—even, if only partially, as was recognized by its sponsors—to combat.

They have truthfully said:

That venereal diseases are the only ones transmitted in full virulence to innocent children and equally innocent wives. That most cases of locomotor ataxia are traceable to syphilis, and that almost all the paralyses in men under forty come from this affection.

That New York city is estimated to have 200,000 syphilitic subjects and probably four times as many gonorrhœics.

That the most serious results of syphilis appear years after its acquisition, and that it may attack any organ of the body.

That syphilis is responsible for a vast number of results reported under other names, and probably is surpassed in deadliness only by tuberculosis.

That it is estimated that forty-two per cent. of all gonorrhœal cases are sterile.—(They probably meant in females.)

That gonorrhœa is believed to be accountable for more than forty per cent. of barrenness in childless marriages.

That eighty per cent. of cases of ophthalmia neonatorum are of gonorrhœal origin, and twenty-five per cent. of all total blindness in this country is due to the gonococcus.

That it is estimated that 50,000 new cases of syphilis occur each year in New York city.

That while all prostitutes are considered gonorrhœic subjects, every fourth one is qualified to transmit syphilis.

That New York City acknowledges between 40,000 and 50,000 prostitutes.

And upon the basis of these appalling facts, they oppose the attempt to render innocuous a part, at least, of these 10,000 to 12,500 syphilitic prostitutes, these 40,000 to 50,000 gonorrhœics!

Paragraphs 93 to 99 lay stress upon the fact that continence is compatible with health, and refer to the moral prophylaxis of venereal diseases, and the prevention of prostitution, and are used to support the contention that the present law recognizes results only, and not causes, and busies itself with palliation, and not prevention.

The question whether absolute continence is compatible with perfect health is one which depends, for its decision, upon the nature of the individual. It is perfectly true that there are individuals—particularly those in whom the sexual instinct is not well developed—in whom absolute sexual continence is perfectly compatible with perfect health. Upon the other hand, however, those of us who have frequent opportunity to study the sexual function, and its abnormalities, are fully cognizant of the fact that there is a very large part of humanity —the major part, I do not hesitate to say—in whom absolute continence is distinctly harmful. We must consider, in the decision of this question, not only the individual who is in the happy position of being able to marry as soon as the sexual function is fully matured but also those males and females who are not thus situated. It may be an easy matter—and is the proper thing to do—for an individual to remain continent until the 21st or 25th year; but it will be an entirely different proposition for the same individual to do so during the entire term of his sexual life. It may be an utter impossibility for another individual to remain continent, even until his majority, and attempts to do so may lead to disaster, and turn the normal desires into abnormal, or perverted channels.

No hard and fast rule, which shall be universal in its application, can be made with regard to any physical function. The individual element enters too strongly into the matter. It is easy for the sexually frigid, or the superannuated, to attempt to make rules to govern the hot blood of youth; but these rules cannot always be carried out.

I would not be understood as denying the value of instruction of our youth to be continent and chaste. I do, however, deny the possibility of a universal application of these teachings.

Prostitution is a product of social conditions, which has been in existence since the earliest days of which we have any history. It is a product of social and economic causes which no legislation can abolish. No laws can force men and women to be all alike in their natural impulses, nor in their powers to resist these. While society may—and should —try, by educational means, to lead men and women to a better understanding of their moral obligations toward each other, and toward the community, no laws can *compel* this understanding, and its observance.

Prostitution will continue to exist, and with its existence there will be a continuance of the ills consequent upon it. It cannot be legislated out of existence, nor can the ills. The most that legislation can do is to attempt to decrease, in a measure, open and flagrant solicitation, upon the streets; to protect the young, innocent, and inexperienced from contamination by hardened offenders; *and to protect the health of the community, guilty and innocent alike.*

According to the recent statement of the president of the Board of Police Magistrates, who is in the position to know whereof he speaks, the present law has, so far, proved to be anything but a failure.

In the interest of fairness, I recently wrote to Mr. Köttig, police president of Dresden, a city in which, for the past few years, adequate examination and treatment of prostitutes, according to the demands of modern science, have been employed. Through the kindness of this gentleman, I have been informed as follows, by Police Surgeon Dr. Winkler, the gentleman having these examinations in charge:

"I am sorry that the shortness of the time available"—(I had asked for an answer, if possible, by October twelfth)—"makes it impossible to give you the information you desired, since the entire material, whose publication is intended for the International Hygienic Exposition of next year, is still in course of preparation. On the whole, however, I am in the position to inform you that, since the introduction of those methods of examination which you saw with us, the number of cases of disease has become so exceedingly small (*verschwindend klein*) that no earnest objection could possibly any longer be advanced against the justifiability of our regulations."

Until the opponents of the present law can offer a substitute, which shall give promise of greater possibilities for good than do the present provisions, they might better reserve their opposition until the present law shall have been fully and fairly tried and proved a failure.

10 West Sixty-first Street.

HYPERNEPHROMA.

By I. W. Blackburn, M. D.,
Washington, D. C.,
Government Hospital for the Insane.

In presenting these two cases of hypernephroma of the kidneys, and one of what may be designated adrenal hyperplasia with fatty infiltration of the adrenal cells, the writer has to apologize for the paucity of the clinical histories, as the cases were discovered post mortem, and with the exception of some general symptoms no indication of the growths appeared during life. The specimens, however, present certain features which taken with the limited clinical record are of unusual interest

The term hypernephroma as used in this paper, is one given to an epithelial cell growth now known to be derived from adrenal tissue whether of the gland itself or aberrant hypernephric tissue situated elsewhere; being most frequently met with in the kidney, the term usually implies a renal tumor if unqualified. Knowing that we have in the adrenal gland only mesodermic epithelium, mesodermic connective tissue, and a few ganglionic nerve cells, we must acknowledge that in this neoplastic derivative we have a potentially or actually malignant combination tumor, the essential elements of which are mesodermic epithelial cells. The growth is, however, not essentially different from the mesoblastic malignant epithelial growths of the kidney and other organs of known mesoblastic embryogenesis. It differs from those tumors, however, in several respects which entitle it to a recognition as a special tumor though closely allied to so called ordinary mesoblastic cancers.

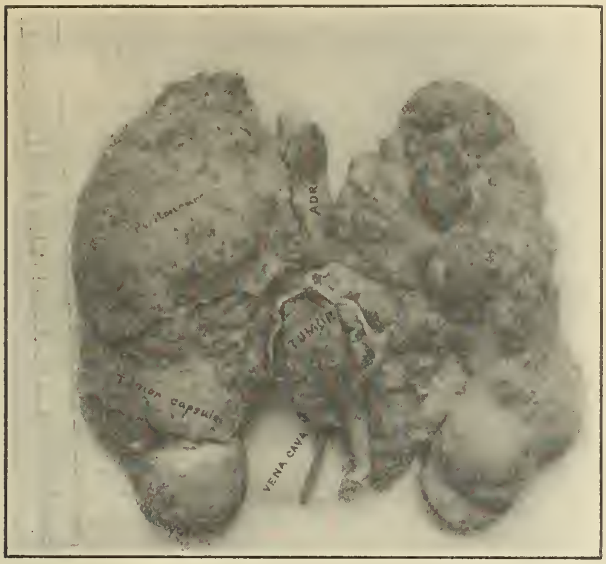

Fig. 1.—Case No. 2498. The exterior surface of the tumor and the kidney laid open. On the left the peritonæum is partly left *in situ* and over the lower end the capsule is stripped from the tumor. The prominent rounded nodules show particularly well on the right (the rear) half. In the central part the vena cava has been opened showing the tumor mass within.

It seems to the writer that the question of assignment of this tumor to one or the other of the two general classes of malignant growths, viz., carcinoma or sarcoma, depends upon what we understand by these terms. By the term carcinoma as now used, the writer understands a new growth, the essential elements of which are epithelial cells; and that these cells by virtue of their vitality are enabled to grow locally and extend into the surrounding tissues; and by their persistent vitality when conveyed by the lymph and blood currents, to form new centres of growth in other situations; this being the simplified expression of malignancy. Further, that the essential cell elements of such tumors may be *epiblastic, mesoblastic,* and *hypoblastic* in embryogenesis; and that by reason of their shape, their functions, and certain general and distinctive characteristics, these cells have received the name of epithelial cells. This general definition and limitation would then include hypernephroma wherever found, and however it may differ in details from ordinary cancers. In order, however, to reach this conclusion we must accept two or three primary conclusions: 1. That there is a primary and final division of the blastoderm into three layers, viz., ectoderm, mesoderm, and entoderm; 2. that there is a final and complete histological distinction of these layers into their constituent elements; and, 3, that the embryogenesis of the various organs is conclusively settled. These conclusions are, however, generally accepted, and we may say provisionally, that we have three subdivisions of the malignant and benign epithelial growths depending upon the before mentioned conclusions, viz.: *entoepithelial, mesoepithelial,* and *endoepithelial* growths, and that the essential characteristics of malignancy may be manifested by all. There can be little question as to which class the tumor in question belongs if we accept these general conclusions. In a given tumor of this class, the first essential is to determine its origin, and by this its embryogenesis; then the details of histology by which the cytogenesis may be determined; and finally by the examination of the tissues in the vicinity, to settle the question of malignancy. There would yet be the determination of the type of growth as, owing to more or less close reproduction of the normal tissue, mode of growth, certain types of cell reproduction, etc., there are numerous varieties of all epithelial tumors.

As to the question whether hypernephroma should be classed with the connective tissue group of tumors which possess the common characteristics of malignancy as defined, the decision must rest on the determination of histogenesis, not the embryogenesis. All true sarcomata are connective tissue tumors, and if we accept the histological distinction as final, there would be no possibility of an epithelial tumor arising from a connective tissue basis or vice versa whether the epithelium be mesoblastic or not.

There is a third form of growth commonly malignant, of mesoblastic derivation, and closely allied to the sarcomata, which may be considered, viz.: the endothelioma. This tumor consisting as it does of endothelial cells within the lymph spaces, lymph vessels, and bloodvessels, may originate wherever connective tissue is found; and under the unknown stimulus of tumor formation these cells may assume almost an infinite variety of shape and size. Being formed primarily within the lymph spaces, the tissue has an alveolar structure and may very closely simulate epithelial growths. It is this tumor in some of its several varieties which most closely resembles hypernephroma and which has most frequently been confounded with it.

The confounding of hypernephroma with adrenal hyperplasia and adenoma, is of little importance, as these tumors are essentially the same when non-

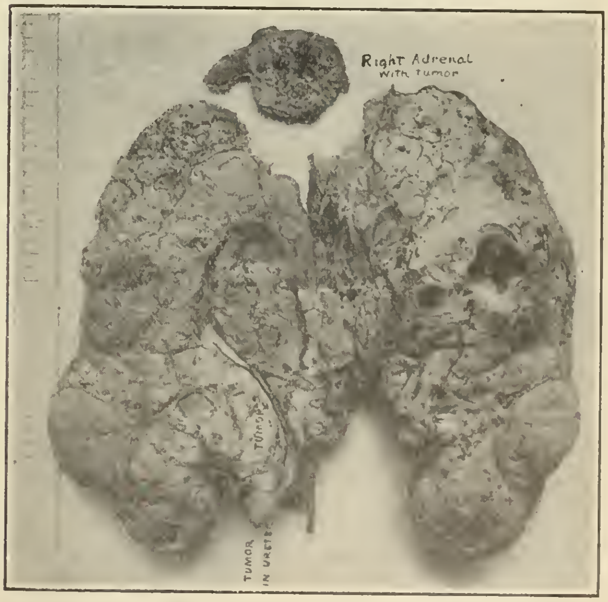

Fig. 2.—Case No. 2498. The cut surface of the same tumor as in Fig. 1. The portion of the tumor mass which had invaded the pelvis and ureter is shown, the rounded tumor masses of all sizes, the remnants of the kidney at the periphery, and above is a section of the right adrenal containing a large tumor nodule.

malignant. The distinction from renal adenoma, is of course a question of histological and clinical differences. If we grant that a tumor of this embryogenesis and histogenesis exists as a distinct growth, it should present certain macroscopic and microscopic characteristics, such as would distinguish it from other growths, and these must be fairly constant to make a diagnosis possible. Individual variations may be met with but these must be disregarded, and the common characteristics must be the basis of the diagnosis.

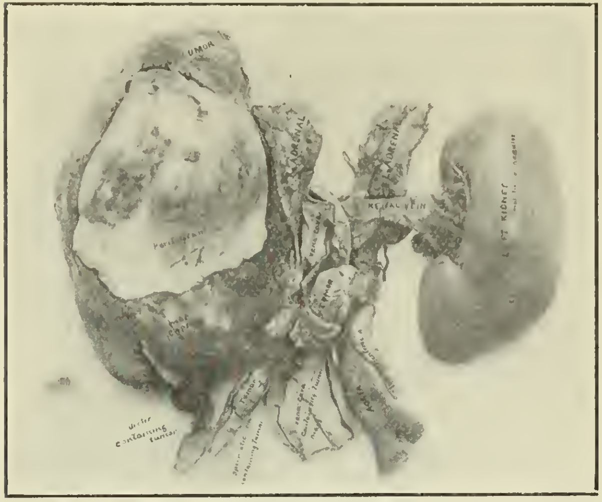

Fig. 3.—Case No. 2508. In this picture are shown the relation of the tumor to the peritonæum, the tumor capsule, and the tumor masses which have invaded the renal pelvis, the ureter, ascending vena cava, renal veins, and the spermatic veins. The left kidney is seen to contain some small masses of the tumor. The adrenals in this case were unaffected.

The reasons for regarding hypernephroma as a special form of tumor though belonging to the general class of epithelial growths, are as follows:

1. Though most frequently met with as a renal tumor, its embryogenesis, or rather organogenesis, is indicated by the resemblance of the tumor structure and the cell elements to the adrenal gland, and the presence of aberrant or misplaced adrenal tissue in the kidney and other organs and tissues of the urogenital system; and the presumption on the theory of Cohnheim that these "adrenal rests" may under some unknown stimulus take on a tumor growth. It is stated that this has been proved in some instances, though opinions differ greatly as to the frequency of these aberrant adrenals. Holmes asserts that they may be found in some part of the genitourinary tract in ninety per cent. of all autopsies, while McFarland in 1,000 autopsies in which he searched for them, found none. My own experience has been parallel with the latter observer, and further, that tumors of any kind are infrequent in the kidneys. There can be no question as to the presence of these ectopic adrenal rests in the kidney and that they do develop into tumors, their most frequent seat being just beneath the capsule of the organ where hypernephromata are most common.

2. The second reason for regarding the tumor as of adrenal origin is the resemblance which the epithelial cells have in their morphology, microchemical reactions, and in their degenerative tendencies to those of adrenal tissue. In shape, size, normal chemical reactions, and in their degenerative products the cells of these tumors are similar to those of the adrenal and unlike those of the kidney. The cells frequently contain fat droplets, may contain glycogen and lecithin such as are commonly met with in the adrenal gland and in tumors which arise from it, though the presence of these substances is not considered as diagnostic.

3. The third diagnostic point is the tendency of the general structure of the tumor tissue to reproduce that of the normal gland. There is an abundant capillary network running throughout the tissue with which the cells may be in intimate relation, while in most of these tumors there is an alveolar structure which strongly suggests the normal. There are, however, certain details of structure which give a distinctive character to the tumor and which are not found in the normal human gland, one of the peculiarities being the occurrence of open alveoli with peripheral cuboidal cells along their walls, which may be the survival of some embryonic origin, or further back, the more primitive type of adrenal of some of the lower animals.

There are yet some peculiarities of growth, details of structure, and differences from renal tumors which seem to indicate the foreign origin of the growth however closely it may be incorporated with the kidney. The tumor occurs most frequently in the kidney, ninety-six per cent. of the reported cases have been of this organ, while at the same time hypernephromata are the most common renal tumors. From the fact that they may be malignant, and that surgical aid is the only treatment, it becomes important that the nature of the growth should be determined and the growth distinguished from other tumors of the kidney. They occur usually beneath the capsule of the organ and are surrounded by a distinct connective tissue capsule belonging to the tumor, therefore they do not show

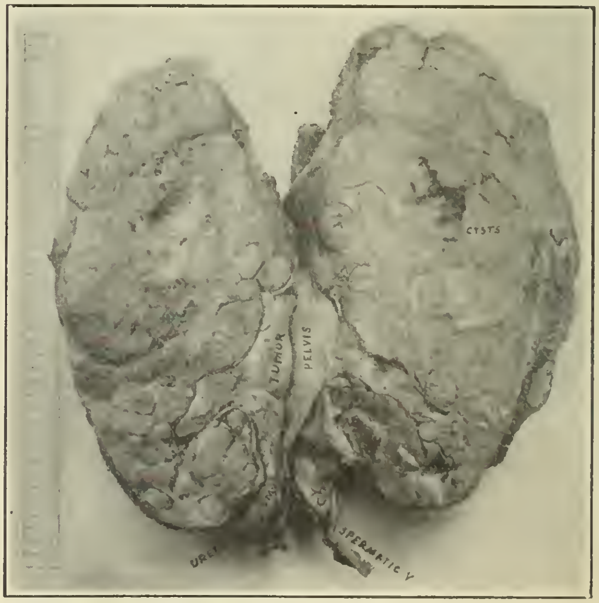

Fig. 4.—Case No. 2508. The same tumor as Fig. 3, laid open, showing the interior. The portion which has filled the pelvis and projected into the interior is shown; the tumor nodules and the cysts of softening are well shown and small remnants of the kidney at the periphery.

the gradual transition to the renal structure as in adenomata, nor any local infiltration of the adjoining tissues as in ordinary renal cancer and sarcoma. They do, however, grow in the line of least resistance by which they may penetrate the renal pelvis, enter the renal veins, vena cava, spermatic vein, and even grow downward and plug the ureter. Metastasis by the bloodvessels is most common and the lymph nodes in the vicinity are usually not affected, in this respect differing from ordinary cancer. The capsule of the tumor usually sharply separates the growth from the remnant of the kidney which is sometimes thinned out and stretched over the tumor like a cap. The capsule of the tumor is of considerable thickness, and on section of the growth trabeculæ continuous with it seem to divide the tumor tissue into rounded or oval compartments, varying in size from a pin head to an orange. On the surface of the growth these masses project as rounded nodules, giving the tumor a nodular or bossed appearance more marked when the perinephritic fat is removed. The tumor masses are commonly of a yellowish white color, sometimes a canary yellow, orange, red, or even purplish, depending upon the presence of blood pigment and blood and the degree of vascularity and degeneration of the tissue. Hæmorrhages are common in all the nodules, mottling the tissue, while different degrees of alteration of the blood give great variety to the color. Cysts from softening are often present in the larger nodules, sometimes with gelatinous contents tinged with blood. The consistence of the tumor nodules is soft, and they project slightly from the cut surface, showing that there is some restraint by the capsules. There is usually no evidence of local extension of the tumor except the invasion of the pelvis and veins which explains the hæmorrhage and the mode of metastasis, while the restraint of the firm connective tissue capsules, the mode of growth, and the peculiarities of the cell elements, doubtless account for the infrequency of dissemination by way of the lymphatics. The fact of the extreme vascularity of the tissue, the thin walled capillaries which intersect the structure, and the frequency of rupture and hæmorrhage are no doubt factors in the bloodvessel metastasis, though cases of lymphatic invasion have been reported. In the nonmalignant forms these conditions favorable for metastasis are not present, but all forms should be regarded as potentially malignant. The fact of the ready communication with the veins should be borne in mind in operations upon such tumors, for though hard to demonstrate, there is certainly a possibility that fragments of the tumor tissue may be mechanically detached and be swept into the circulation and give rise to embolism and metastasis. The most common seats of metastasis are the liver, lungs, and bones though deposits may be found almost everywhere, and in some of my cases the opposite kidney, adrenals, heart, diaphragm, and pleura were affected. It is difficult to account for all these sites of metastasis from the venous circulation and it would seem necessary to suppose a capillary invasion in some instances. The bones are mentioned by almost all observers as frequent seats of metastatic growth, but in none of my cases were there any bone deposits. In the lungs and liver some of the secondary tumors may be very large but usually they are small and numerous. In none of the cases studied

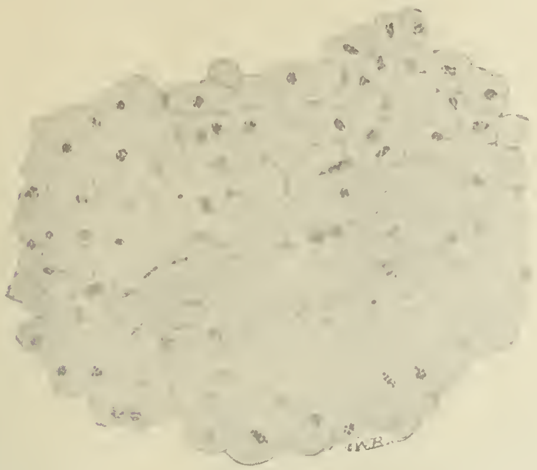

Fig. 5.—Case 2498. Small field from the primary tumor showing the general appearance of the tumor tissue under a comparatively low power. ×300. Reduced.

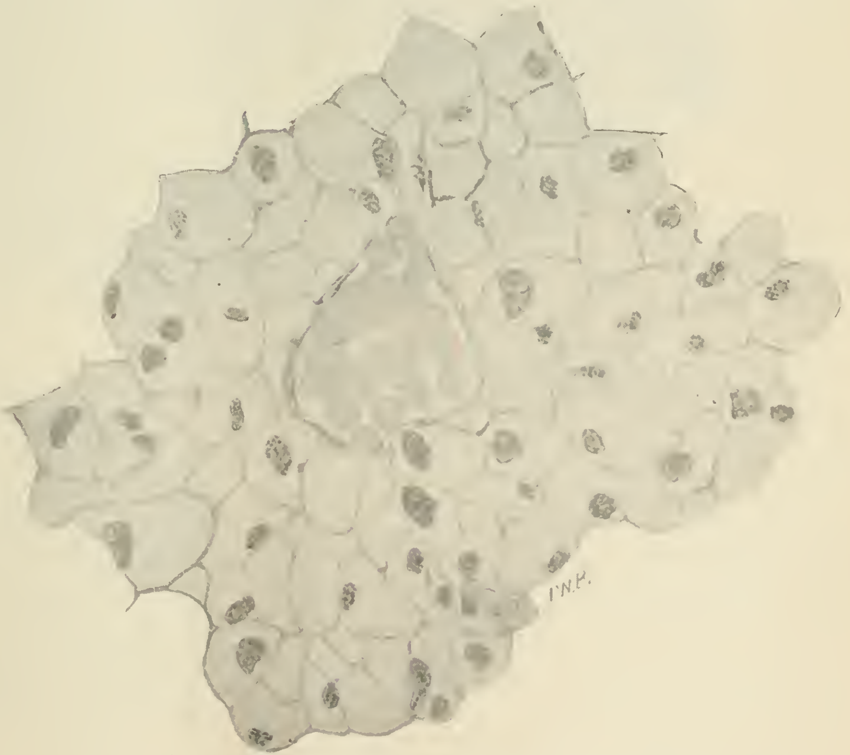

Fig. 6.—Case No. 2498. Small field, from the primary tumor, showing the polygonal shapes of the clear cells and their relation to a small bloodvessel. Some of the cells show a faint indefinite protoplasm reticulum; some show no nuclei, the cell being cut above or below it. ×800. Reduced.

by the writer, were any indications of lymph node invasion, and as a rule this is a point of some surgical importance.

The tumor is more common in males (nineteen out of twenty-eight cases, Lusbarsch); more frequent in the right kidney (eighteen out of twenty-six cases, Ellis). The average age of the patients affected is, according to Pfahler, fifty-two years, it is therefore a tumor of middle or advanced age, though some cases are reported as occurring in children. The duration of the tumor may be from fifteen weeks to eight years, though the actual duration is uncertain and the growth may for a long time remain dormant and suddenly take an active growth, metastatic extension, and end fatally. It would seem evident from the nature of the growth that the tumor matrix must be congenital so that all conclusions as to the duration must date from the time the tumor became manifest.

The symptomatology is not distinctive of the kind of tumor, though perhaps a diagnosis might be thereby aided. The three most important symptoms and diagnostic factors are hæmaturia, pain, or renal colic, and the detection of the tumors. Hæmaturia is present in seventy-five per cent. of the cases; it is usually intermittent, may only occur once, and is absent in about one fourth of the cases so that the absence of hæmaturia is no evidence that tumor of the kidney is not present. Pain is noted in about one half of the cases. Pfahler observed it in nineteen out of twenty-six cases. It may occur with or without hæmaturia and is sometimes coincident with the passage of blood clots by the ureter. Tumors have been found in eighty-nine per cent. of the cases; sometimes the growth reaches the size of a child's head; it may be freely movable, a valuable point in the differential diagnosis from cancer of the kidney and sarcoma. The general symptoms are marked asthenia, emaciation, depression, and anæmia of a simple type. Small tumors and even large ones frequently give rise to no general symptoms, so that these tumors are found unexpectedly at autopsy; this is especially liable to occur in the mentally diseased in whom the subjective symptoms are not regarded.

HISTOLOGICAL CHARACTERISTICS.

The histology of a tumor of such diversified character as hypernephroma is a difficult matter. The essential structure seems to be based upon that of the adrenal, especially that of so called adrenal hyperplasias or adenomata. Sometimes the resemblance to any form of adrenal growth is very remote and without doubt many such tumors have been diagnosticated as renal cancer or as sarcoma. The characteristic feature of most tumors of the class is an alveolar structure of sometimes distinct fibrous walls, and at times naked capillaries with which the cells are in immediate contact. In some tumors the alveoli are small, the contained cells are polygonal and cancerlike so that such sections show a remarkable resemblance to ordinary carcinoma; but in others, and sometimes in different parts of the same growth, the cells may be larger, may be columnar,

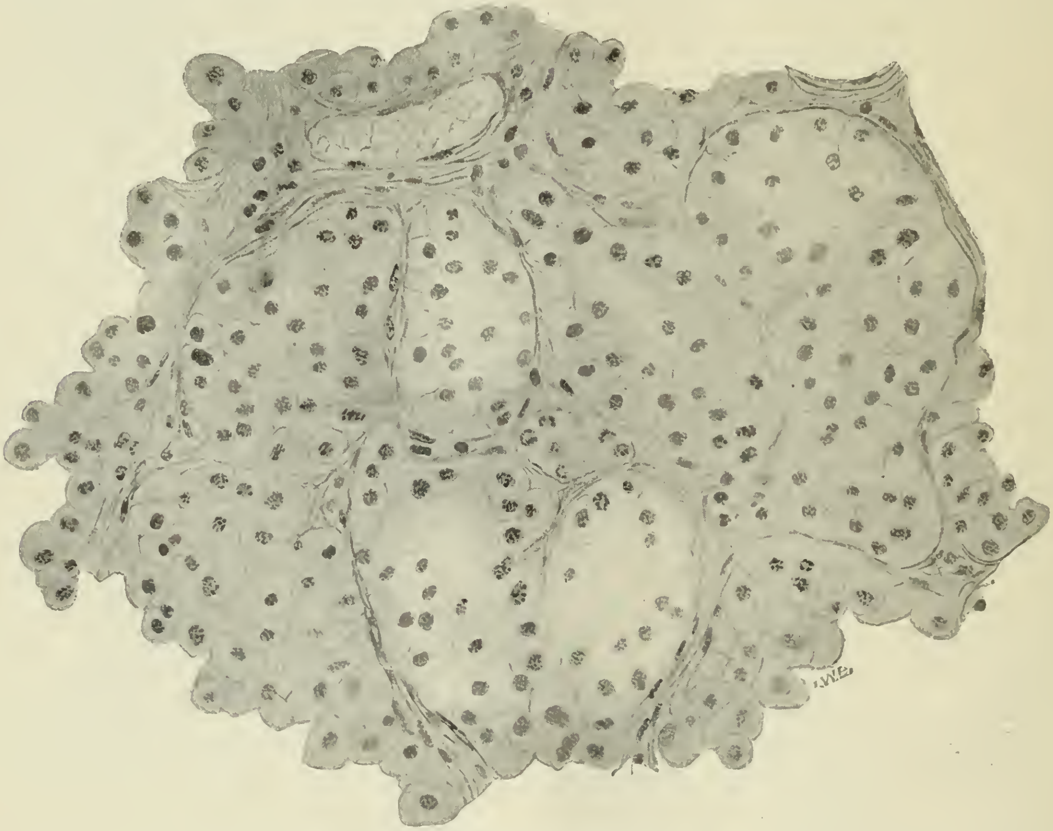

FIG. 7.—Case 2498. Large field from the less degenerated portion of the primary tumor showing the alveolar structure and the relation to the stroma and bloodvessels. In some of the central cells the glassy change is beginning to be apparent. Many of the cells appear to be mere globules of hyaline protoplasm. ×400. Reduced.

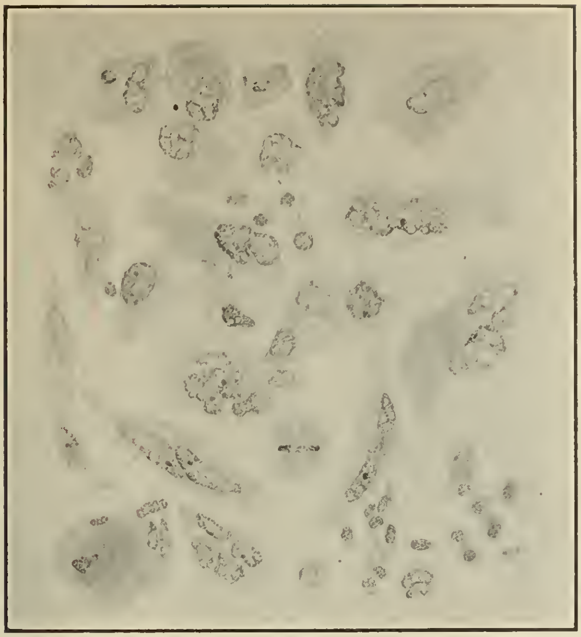

FIG. 8.—Case No. 2498. Selected examples of the gigantic cells in a secondary nodule in the lung. The outlines were carefully drawn with the camera lucida. Several multinucleated forms are represented; one shows a karyokinetic figure. The small cells are introduced to show the relative size of the elements and at the lower right corner are several pulmonary epithelial cells and two red blood cells for comparison. In some of the nuclei and in the protoplasm vacuoles are found and some of the cells were apparently fatty. ×800. Reduced.

and arranged palisadelike along the capillary walls, and within the alveoli vary greatly in size and shape. In some tumors the prevailing type of cells is a large columnar or polygonal form with clear protoplasm and sinuous outline; in some these clear cells may make up the bulk of the primary tumor while the secondary growths may show cancerlike cells. Some tumors show an alveolar structure with open alveoli, sometimes containing blood and a few loose cells while the alveolar walls may consist of nearly naked capillaries. This form of the tumor seems to be not uncommon as several of the textbooks of pathology illustrate the tumor by drawings of this structure. Though the histology is difficult to describe verbally, there are certain cell features, and tissue arrangements which seem to be more or less common to all tumors of the class. First the presence of large clear cells with a distinct outline, an unstained cytoplasm sometimes showing an indistinct protoplasmic net work which may be left after removal of the fat. Second, the naked capillary network with cells in immediate contact with the vessel, sometimes arranged in regular order along the wall. Third, the presence of an alveolar structure similar to that of adrenal hyperplasias and certain parts of the normal gland. Fourth, the characteristic resemblance of the bulk of the cells to those of the adrenal, together with the metachromatism of the cell nuclei, the degenerative tendencies, and the presence of glycogin and lecithin. Fifth, the negative characteristics, by which these tumors differ in structure from tumors of the kidney in which they are found, especially from the renal adenomata.

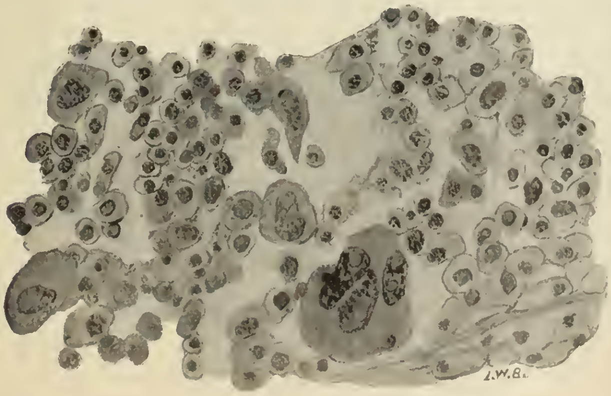

FIG. 9.—Case No. 2498. A field from the periphery of a secondary tumor of the lung showing giant cells and the cellular elements amongst which they are found. ×250. Reduced.

A most remarkable lack of uniformity in details of structure is sometimes met with in the secondary tumors. In some the resemblance to the parent growth is so slight that unless carefully studied they would not be taken for the same tumor, or might be diagnosticated as carcinoma or sarcoma. In some of the secondary growths compression of the soft cells and their nuclei results in a striking resemblance to spindle celled tissue, for this reason examination of the secondary deposits is not conclusive. A striking feature in some of the tumors primary and secondary, is the presence of huge polymorphous or spindle shaped cells with from one to four or more nuclei. In one of my tumors this feature was observed in certain metastatic tumors of the lung while the general structure of the primary growth and many of the secondary deposits were entirely different. Figs. 9 and 10 show the difference in structure of the two parts of the same secondary nodule. Some of the large cells showed evidences of karyokinesis and it seems probable that the presence of these overgrown elements is an evidence of hypernutrition.

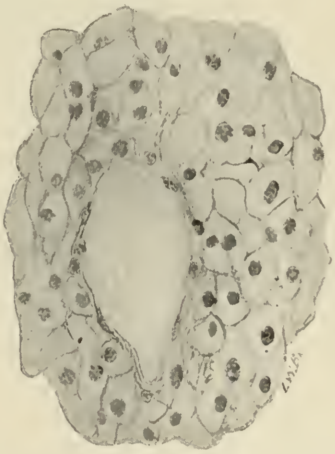

FIG. 10.—Case No. 2498. A field from the central part of the same tumor node giving the ordinary appearance of the secondary nodes. No giant cells are found in the central part of this node nor in the majority of sections from other tumor deposits. ×250. Reduced.

The connective tissue stroma of these tumors presents nothing distinctive, and the bloodvessels are in no way peculiar except that hyaline or amyloid thickening is rather common. There is no intercellular reticulum among the cells as in sarcoma.

Of the adrenal adenomata and hyperplasias not much is known. The one introduced here consisted

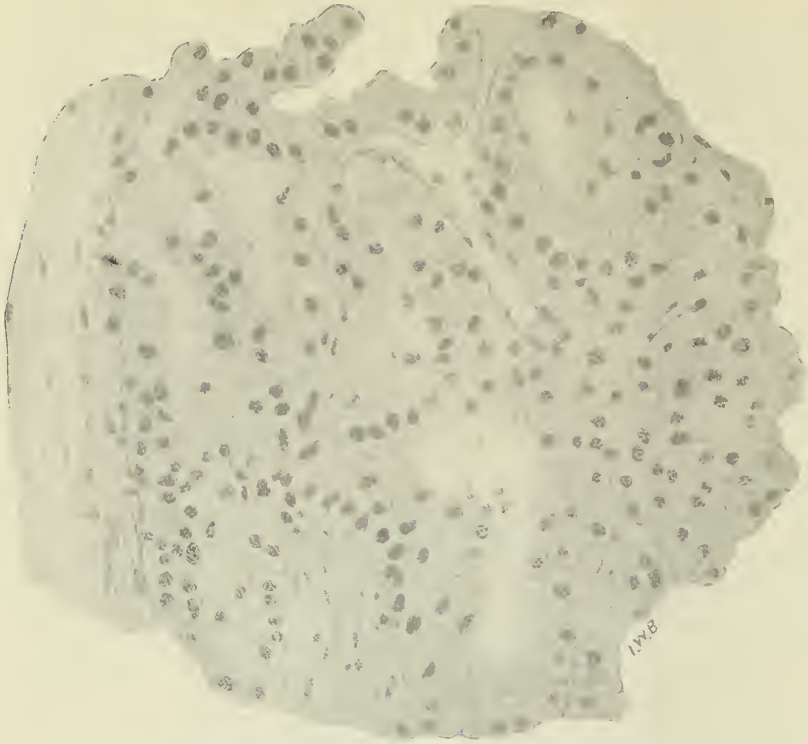

Fig. 11.—Case No. 2508. Field from the primary tumor in this case showing the general structure and the tendency of the cells to become columnar along the walls and to form open alveoli. In the upper part of the picture a naked capillary is seen with the tumor cells in immediate contact with the wall. ×300. Reduced.

of enlarged and fatty cells which gradually merged into the normal at the periphery of the gland. The gland itself was quite perceptibly enlarged and it seemed that though the general structure resembled the normal gland and active hyperplasia had taken place. and with it a decided fatty infiltration of the cells.

True hypernephroma of the adrenals is rare but a few cases have been reported, also cases of carcinoma, though it is hard to see how these may differ from malignant hypernephroma. In two adrenal tumors studied by the writer, the cells of the tumors bore a striking resemblance to those of the adrenal gland but were smaller. The cell arrangement was unlike that of typical hypernephroma and there were no clear cells, no distinct alveoli, and the cell elements bore no definite relation to the walls of the bloodvessels. Large areas were found consisting of uniformly shaped cells with a few thinly walled bloodvessels; some of the cells were distinctly pigmented and rarely they were arranged in indefinite rows suggesting the fasciculated structure of the adrenal gland. Such richly cellular tumors have been called sarcoma under the belief that it would be possible for the mesoblastic epithelium of the adrenal to give rise to a mesoblastic tumor of another class, viz., a sarcoma, but it seems better to assign such tumors to the mesoblastic epithelial growths bringing them under the same class as the hypernephroma though greatly modified. Such tumors may be malignant and the secondary growths closely reproduce the primary. True connective tissue or malignant growths may of course arise from the connective tissue of the gland, and even endothelioma, but both true sarcoma and endothelioma are excessively rare.

Hypernephroma of right kidney with metastasis to liver, lungs, adrenals, left kidney.

Case No. 4549. E. D.: aged sixty-three; male; single; white; laborer; nativity, New York. Mental disease, dementia præcox. Patient admitted to hospital September 13, 1878, with a diagnosis on admission of chronic melancholia. He came to the hospital ward February 11, 1907, suffering from hæmaturia. Treatment seemed of little avail though at times the hæmorrhage was not apparent to the naked eye, and it continued during life at intervals. He was anæmic but fairly well nourished; remained in bed. His mental condition was such that he could not aid the examiner by complaint of pain or otherwise, and a tumor was not made out before death. Uranalysis showed some albumin present and red blood cells with some leucocytes and epithelium; blood examination showed simply anæmia. The patient died May 18, 1909. The only symptom of tumor of the kidney were the intermittent hæmaturia, asthenia, emaciation, languor, and occasional depression. Tumor and pain were not elicited; owing to the mental state of the patient, the growth was discovered unexpectedly at the autopsy.

Autopsy. No. 2498. Body somewhat emaciated; skin pale; rigor mortis present. No signs of disease externally. Cranium. Skull and dura normal. Brain. Weight, 1140 grammes. Slight general atrophy; brain tissue had a clay tint from anæmia. Slight granular ependymitis.

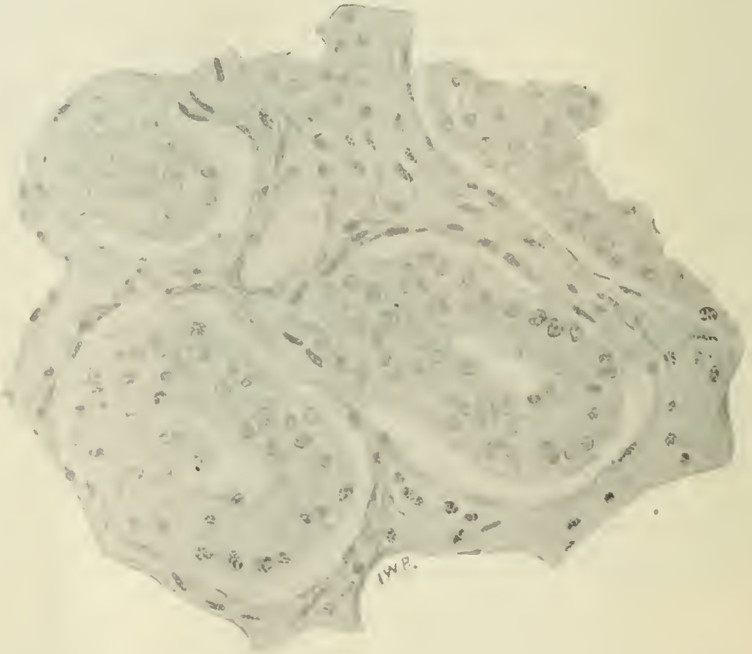

Fig. 12.—Case No. 2508. A small field from the same primary tumor in another situation. Here are seen alveoli with columnar shaped cells, open alveoli, and fibrous walls, giving a striking resemblance to ordinary adenoma. All transitions of structure are found in this tumor. ×300. Reduced.

Lungs. Weight of left, 420 grammes; right, 495 grammes. Each lung contained several nodules varying in size from that of a pea to that of a walnut. Heart, weight 300 grammes. Valves of right side normal; left valves and aorta practically normal. Spleen, normal, weight 195 grammes.

Kidneys. The right kidney was almost replaced by a large tumor mass, and only small remnants of the renal tissue could be found. In general the mass preserved the shape of the kidney, but the surface was bossed by large rounded nodules made more evident after the removal of the adherent perinephritic fat. Section showed the growth to be beneath the capsule of the kidney and composed of yellowish white, round or oval nodules, separated from each other by connective tissue trabeculæ continuous with the capsule. These tumor nodules were soft, mottled by hæmorrhage and projected from the cut surface showing that some tension was present. The growth had extended into the renal vein and the ascending vena cava, and into the pelvis and ureter. The inferior vena cava was not completely obstructed; the ureter was dilated at its upper end and almost completely filled with the tumor mass. Both adrenals contained secondary tumor deposits exactly similar to the primary. The left kidney contained a number of small tumor masses; in other respects it was normal.

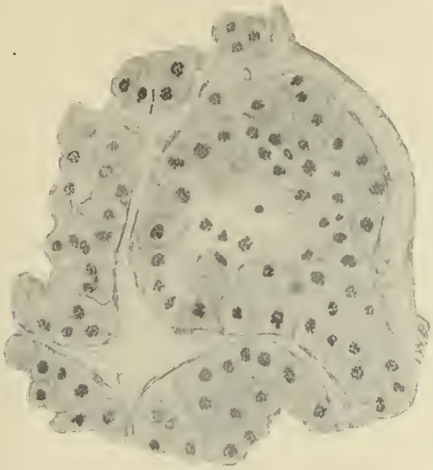

FIG. 13.—Case No. 2508. A small area of a field of the primary tumor in which the capillaries form a network and the cells are columnar and in direct contact with the capillary wall. ×300. Reduced.

Liver, weight, 1430 grammes. Several metastatic tumor nodes in the right lobe; in other respects normal. The mesenteric nodes were normal and no involvement of these structures anywhere.

Microscopical examination. The primary tumor in this case consisted mainly of a well marked alveolar structure with walls composed of thin strands of connective tissue carrying bloodvessels, while the acini were filled with cells of polygonal shape and mostly clear cytoplasm, or at least not stained by ordinary methods. Sometimes the cytoplasm contained a faintly stained remnant of a protoplasmic reticulum, and occasionally some alveoli would stain. The nuclei in such clear cells were commonly situated eccentrically and were misshapen but stained well. In some fields of the tumor there was a tendency to columnar shape of the cells along the capillaries but there was no regular palisade order of the cells as in some tumors of the class. In some parts of the primary and in some of the secondary tumors the soft clear cells and their nuclei had become so flattened by pressure that the tissue much resembled one composed of spindle cells. In some of the pulmonary nodules a striking feature was the presence of huge polygonal, or spindle shaped cells with sometimes one huge nucleus and in others two, three, or four distinct, though usually distorted nuclei. Usually these cells were found near the periphery of the nodule where the bloodvessels were numerous and they lay among cells of almost every variety of size and shape. Among the smaller cells were numerous round elements resembling lymphocytes, spindle shaped cells, and cells of almost all types except the typical cells of the tumor proper. The great mass of a tumor nodule was made up of typical clear cells variously modified by pressure but at the periphery the structure was composed of a vast number of small cells resembling lymphocytes, small spindle shaped and polygonal shaped cells, and scattered in the midst of these smaller elements were the huge, overgrown cells.

Fig. 9 shows a small field drawn from tissue of this sort, while Fig. 10 shows the typical tumor tissue from the same node. It would seem that the excessive vascularity of the peripheral parts of the nodule in some way determines the growth of these large cells. Though the giant cells have only been found in certain nodules and in the situation noted, Kelly and others mention them as a part of the tumor histology and such they may be. (Fig. 8.)

Hypernephroma of right kidney with metastasis to liver, lungs, heart, pleura, and left lung.

CASE No. 17,794. G. F., aged fifty-eight; male; white; single; seaman; nativity, American. Mental disease, arteriosclerotic dementia.

The clinical history of this case relative to the symptomatology of the tumor is almost negative. He was much demented and therefore could aid the examiner very little. He suffered physically very much with itching of the skin attributed by himself to "bugs coming out of his skin." The physical condition as stated by the physician in charge was as follows: An accentuated second sound indicated some heart lesion; ankles, œdematous; skin, dry, scaly, and slightly jaundiced; superficial arteries, atheromatous; hydrocele of right side; superficial abdominal veins of right side, prominent; some enlargement of the liver noted. He was put to bed forty-eight hours before death on account of dyspnœa and pain in the pericardium. There seemed to be much fluid in the chest and abdomen, and for relief of the former, paracentesis thoracis was tried with only temporary relief; œdema of the lungs and cardiac failure was the assigned cause of death. At no time was hæmaturia observed. The patient was too demented to locate the pain, if any, and with the exception of the clinical signs and general emaciation and weakness no characteristic symptoms were present. Uranalysis showed no albumin, casts, nor abnormal cell elements; the spe-

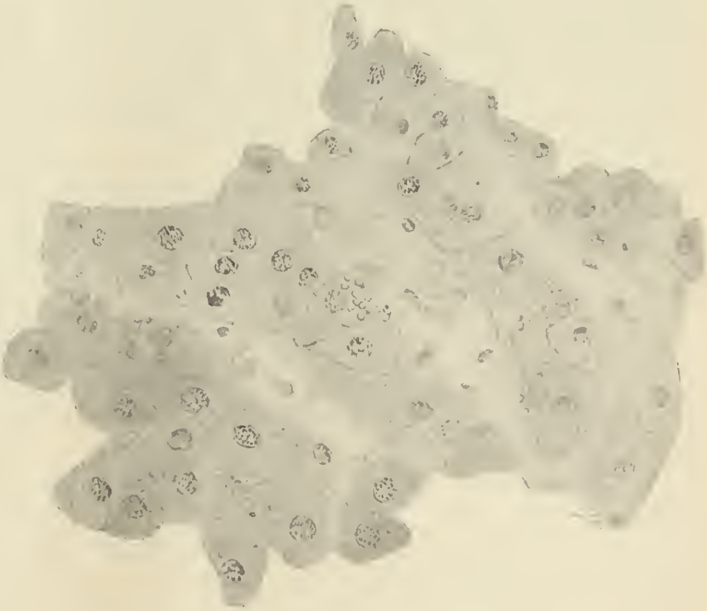

FIG. 14.—Case No. 2488. A small field from the periphery of the fatty changes in adrenal hyperplasia. It will be seen that the fatty cells are much larger than the normal adrenal epithelium, and that the fatty change is gradually invading these cells. ×300. Reduced.

cific gravity was 1.008. Hypertrophic cirrhosis of the liver was suspected from the assemblage of symptoms.

Autopsy No. 2,508, forty-three hours after death.

Body was that of a middle aged, white man; some emaciation present. Skull normal; dura showed pachymeningitis interna of both sides. Brain. No arteriosclerosis; slight atrophy of convexity anteriorly; some adhesions in the posterior horns of the lateral ventricles; slight granular ependymitis of the fourth ventricle; some dilatation of perivascular spaces of the basal nuclei. Weight, 1370 grammes. Lungs. Weight of right, 810 grammes; left, 880 grammes. The pleura of the thoracic, diaphragmatic, and costal surfaces on both sides showed numerous whitish and mottled nodules, some of which were pedunculated; the ribs were not involved. The lungs were covered with whitish and black mottled nodules varying in size from a pinhead to a large orange. Sections of the organs revealed numerous nodules in the pulmonary parenchyma of the same character as those of the surface. The black mottling of the nodules appeared to be anthracotic, of the same nature as that of the pulmonary tissue. There was a marked increase of pleural fluid. Heart. Weight, 410 grammes. Organ large and flabby. Two white nodules on the surface near the apex. The tricuspid valve was relatively incompetent; aortic valve a little thickened and showed a few small vegetations; mitral valve slightly thickened and incompetent. Pericardial fluid increased. Spleen. Weight, 400 grammes. Pulp firm, not amyloid; capsule a little nodular. Liver. Weight, 2550 grammes. The tissue showed the nutmeg appearance of passive hyperæmia. The organ contained a number of whitish tumor nodules. Gallbladder normal. Stomach showed a catarrhal condition.

Kidneys. Weight, not taken. A large tumor mass occupied the situation of the right kidney. It was at least four times the size and weight of the normal organ. After removal of the tumor it was seen to take the place of the kidney. The surface was coarsely bossed and nodulated; the kidney itself could not be made out with certainty. Section showed the remnants of the kidney forming a thin layer around most of the tumor, and there were some remnants of calices and pyramids. The growth was surrounded by a firm capsule continuous with that of the kidney. At the lower end of the growth were numerous rounded nodules of soft, white tumor tissue contained in alveoli composed of trabeculæ of connective tissue continuous with the capsule; at the upper end a large tumor mass which contained some cysts. On dissection it was found that tumor masses had grown into the pelvis and ureter; the spermatic vein, the renal vein, and a large mass occupied but did not wholly obstruct the ascending vena cava. There were no hæmorrhages into the tumor tissue and the color of the tissue was a faintly yellowish white. The tumor masses in the renal pelvis, ureter and veins were adherent to the walls. The left kidney contained a few small tumor nodules beneath the capsule. The adrenals occupied their usual position relative to the kidneys and they contained no tumor deposits.

The mesenteric nodes and others showed no tumor deposits and seemed perfectly normal.

Microscopical examination. In this tumor the essential structure consisted of alveoli with walls composed of thin strands of connective tissue, sometimes consisting of naked capillaries. There was a marked tendency for the cells in this tumor to arrange themselves in palisadelike rows along the capillaries and alveolar walls. In some places the long columnar cells along one capillary would interlace with those of an adjoining vessel and running parallel the two would show a ladderlike arrangement which was characteristic. Transverse sections of some capillary vessels showed a radiating arrangement around the lumen of the vessel giving a clue to the actual papillary arrangement of the cells in certain fields. In some fields all of the cells within the alveoli were polygonal; in others the peripheral elements were columnar and the lumen was open giving a striking resemblance to the ordinary kinds of adenoma. In this tumor there were no actual clear cells, no giant cells were found in any of the tumors and all of the secondary growths were quite similar to the primary.

Hyperplasia of the adrenals with fatty degeneration.

Case No. 14,395. W. J. McC., aged forty-five; single; soldier; white, nativity, United States. Mental disease on admission in 1904, acute melancholia; patient deteriorated rapidly, becoming markedly demented. Neither the patient's history previous to admission nor his clinical examination while in the hospital gave the slightest clue to the condition of the adrenals. He had some history of alcoholism, and finally sunstroke. His complexion was noted as sallow but the skin in general was normal. At about four weeks before death an intractable diarrhœa developed with frequent stools of a dysenteric character, from the exhaustion of which he died. The examination of the urine was negative. The synopsis of the clinical history furnished to the pathologist, stated that patient had some heart trouble. Tuberculosis was suspected but could not be confirmed by sputum examination.

Autopsy. No. 2,438. Body of a well nourished white man. Skull and dura normal. Brain, weight, 1,350 grammes. Great shrinkage over the convexity with marked excess of cerebrospinal fluid. Tissue œdematous and soft; no disease of vessels; interior showed no lesions. Lungs. Weight of right, 410 grammes; left, 540 grammes. There were chronic cicatricial tubercular deposits in both lungs, with a recent dissemination of more acute foci in the vicinity. Heart. Weight, 270 grammes. A large patch of opacity over right ventricle; slight incompetency of the tricuspid valve; a little thickening of the edges of the mitral valve. Spleen. Weight, 140 grammes. Normal. Liver. Weight, 1,640 grammes. A slight nutmeg appearance of the tissue, and a little fatty infiltration.

Kidneys. Weight of right, 140 grammes; left, 160 grammes. Capsules adhered slightly to a fairly smooth surface.

Adrenals. Weight of the right, 25 grammes; left, 10 grammes; the normal weight being from one and one half to four grammes. The right showed the normal shape of the gland but was greatly enlarged and markedly yellow in color. On section the tissue seemed firm. There was no gross distinction of medulla and cortex, the yellow firm tissue apparently occupying the whole gland. There were no hæmorrhages in the tissue, and no caseous areas suggesting tuberculosis. Almost the whole of the right organ was changed into this abnormal tissue, and the left showed an extensive deposit surrounded by a grayish more normal border. There were no abnormal adhesions of the glands, and no secondary deposits.

Intestines. In the ileum were four ulcers of a tuberculous character, and the lower three fourths of the colon showed the lesions of acute ulcerative inflammation, nontuberculous.

The urinary bladder showed a condition of chronic catarrh.

Microscopical examination. The affected tissues seemed to be made up of small alveoli containing large fatty adrenal cells. The alveoli were composed of fine trabeculæ of connective tissue carrying small bloodvessels, and here and there were small aggregations of lymphoid cells of uncertain nature. The cells themselves were several times as large as normal adrenal cells but possessed similar nuclei and nucleoli. The shape was that of the adrenal cells. The cytoplasm presented a fine reticulum of protoplasmic remnants which had inclosed fine globules of fat. Staining with the appropriate stains showed the cells to be crammed with fat globules. The nuclei did not seem to be infiltrated, though a few vacuoles in them suggested it. Glycogen was not found in these fatty cells. At the periphery of the fatty tissue the cells were seen to become less and less filled with fat until finally a few alveoli were found with normal adrenal cells. The same gradual cessation of the fatty changes was seen on the border of the fatty areas of the left kidney. There was nothing to suggest tuberculosis of the tissue; no caseous nor necrotic areas and no tubercular tissue.

The conclusion reached was that the condition was a hyperplasia of the adrenals with a fatty infiltration of the hyperplastic tissue cells.

The condition did not differ materially from the cases of hyperplasia without fatty changes though I believe some fatty infiltration is usually present in these cases. That the change is an infiltration and not a degeneration is, I think, conclusive from the gradual infiltration of the peripheral cells, the size of the fat globules, the fact that the cells were enlarged not atrophied, and that the nuclei were not atrophied. The conditions therefore cannot be accounted for by any theory of infectious poison from the colitis or the tuberculosis and the cause must remain unknown. The areas of connective tissue rich in cells indicate that the hyperplastic stimulus must have affected all of the elements of the gland. As there was no evidence of Addison's disease it is possible that the remaining normal parts of the gland may have preserved their functions.

In conclusion the writer wishes to thank collectively the various authors whose works he has quoted, and especially, would he acknowledge his indebtedness to Kelly, whose masterly work has done so much toward the elucidation of this obscure subject. For excellent biographical lists, I would refer to that of Kelly in the *Philadelphia Medical Journal,* 1898, and to that given by Keen, Pfahler, and Ellis in *American Medicine,* viii, 1904.

THE OPERATIVE TECHNIQUE OF CYSTOURETHROSCOPY.

By Leo Buerger, M. A., M. D.,
New York,

Assistant Adjunct Surgeon and Associate in Surgical Pathology, Mount Sinai Hospital; Associate Surgeon, Har Moriah Hospital.

Having elsewhere reported the uses of the cystourethroscope as a diagnostic instrument, it seems to me that an exposition of the operative measures that can be performed with it, may not be amiss. Although it would appear at first sight that a straight endoscopic tube, would be more generally useful in making topical applications, it becomes plain to one who has attained the requisite practice. that the telescopic instrument (Figs. 1 and 2) which I have called a "cystourethroscope," has a still wider scope of utility in the execution of therapeutic procedures than the older instruments. As for the ease and exactness with which even complicated operative measures can be performed, we can say without hesitation that the irrigation instrument surpasses the direct vision types.

In a previous communication[1] I pointed out that two types of illuminating source could be used in the cystourethroscope. I finally adopted an indirect method allowing the rays of light to pass through a specially constructed prism. My aim was to avoid transillumination even when the mucous membrane was practically in contact with the source of light. Recent experimentation has shown that it is possible to use the direct rays of a lamp, if the latter be properly situated in the sheath. Early in the work it seemed that this would be rather difficult from a technical standpoint, but of late the construction has been so simplified that I am now prepared to say that either method, the prismatic source or the direct roof type through an obliquely set window, will give us a perfectly satisfactory supply of light.

Local therapeutic as well as diagnostic measures are carried out either in a fluid or air medium. Let us direct our attention to some of the procedures which are permissible while irrigation is going on.

Probing of ducts. It is an easy matter in practically all cases to pass a fine filiform bougie into the utricle; and a little practice will enable us to probe the ejaculatory ducts and to explore the orifices of some of the larger prostatic glands. Having determined upon the exploration of the utricle, the ejaculatory ducts, or a possible fistula, the distal end of the channel which lies under the telescope is fitted with a special deflector (the filiform deflector) seen in Fig. 3. By proper adjustment of the deflector we are able to control the inclination of the filiform in its advance out of the window. In general, we set it so as to get maximum deviation. The introduction of a bougie into the utricle is extremely simple. Having placed the utricle orifice in the centre of the field, the bougie is made to emerge while the irrigating flow is going on. As a rule it will impinge directly upon the orifice, and further introduction is easy. The varying size of the colliculus, the dilatability of the urethra, and the angle of deflection of the bougie are all factors which influence the facility with which this procedure can be executed. In cases of very small colliculus, where there is a considerable distance between the fenestra and the orifice of the utricle, it may be wise to diminish the irrigating flow, or to cause it to stop altogether, so as to bring

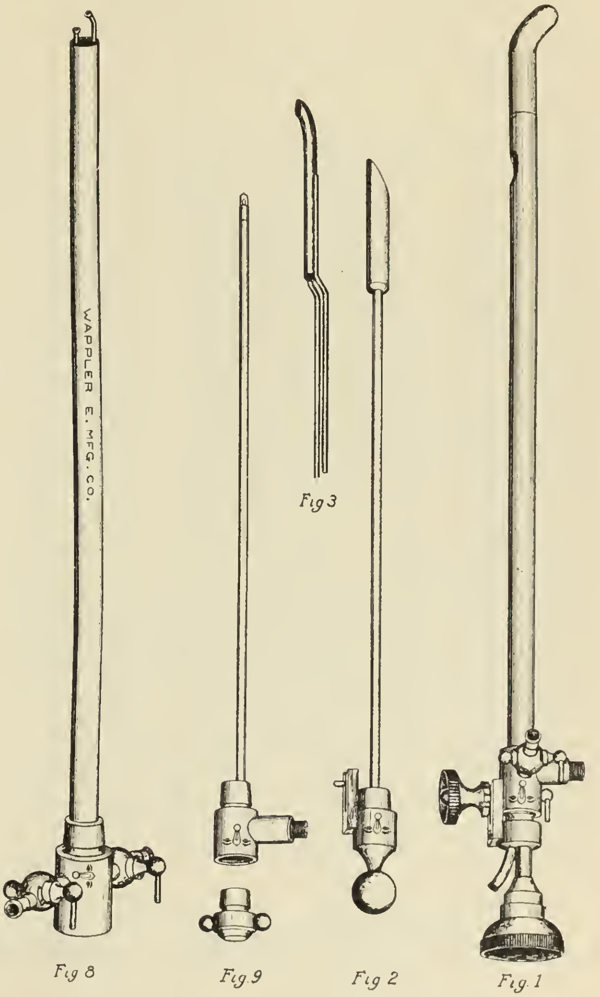

Fig. 1.—Sheath of the cystourethroscope.
Fig. 2.—Obturator of the cystourethroscope.
Fig. 3.—Filiform deflector. This is of twice the relative size of the other figures.
Fig. 8.—Aspirator injector.
Fig. 9.—Special light carrier.

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[1] *American Journal of Surgery,* May, 1910.

about an approximation of the points in consideration. Should difficulty of introduction be due to an improper degree of deflection, the following manœuver may be resorted to. The orifice of the utricle is made to occupy the lowest part of the field, which corresponds to the point of emergence of the bougie. The colliculus is now made to prolapse slightly by stopping the irrigating flow, and, while in this position, the bougie will usually enter without difficulty.

Collecting secretions. I do not wish to dwell here upon the passage of catheters into the ureters, for this belongs rather to the province of cystoscopy. However, a ureteral catheter finds its usefulness in endourethral manipulations. Early in this work it became apparent that the cystourethroscope affords us means not only of examining critically the mucous membrane and duct orifices of the prostatic urethra, but that it also makes possible the collection of prostatic secretions under control of the eye. My technique is the following: With a catheter deflector and a single ureteral catheter (5 French) in place, the left or right sulcus lateralis, or whatever other region may be desired, is put in the middle of the field. The flow of irrigating fluid is stopped, and with the index finger in the rectum, the prostate is massaged. As soon as we see the prostatic secretion exuding from the ducts, an aspirating bulb at the other end of the catheter is made to evacuate the accumulated fluid for examination. Although this procedure requires some practice, we will succeed after a little experience in collecting prostatic fluid free from the admixture of other urethral elements.

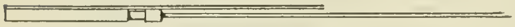

FIG. 4.—Knife concealed in sheath.

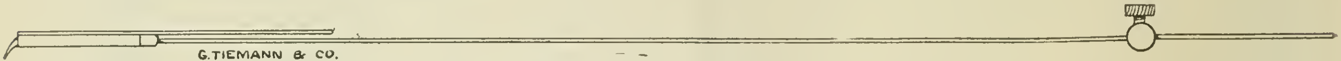

FIG. 5.—Blade projecting; wire handle with governing screw in place.

Fulguration. Another very interesting endourethral therapeutic measure is the employment of a high frequency electrode. An insulated copper wire having a total thickness of about 5 French is used in the same way as a ureteral catheter. It may be directed against a small papilloma, against an inflamed patch, or an ulcer, and an application of from 1 to 3 seconds usually suffices to cause complete destruction of the mucous membrane of a small growth.

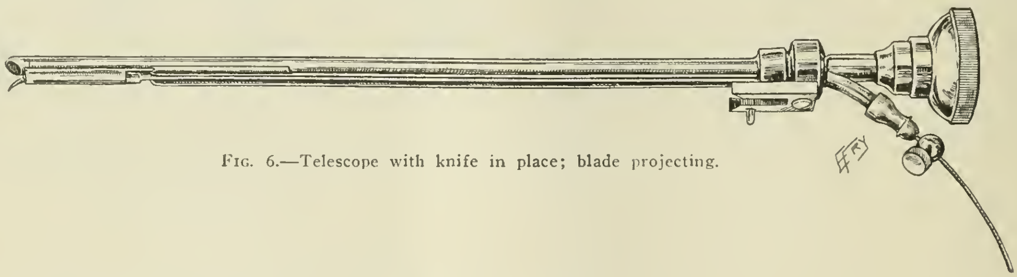

FIG. 6.—Telescope with knife in place; blade projecting.

Incision of cysts. One of the most practical of the instrumental accessories belonging to the cystourethroscope is a fine knife which has given me excellent results in the treatment of cysts of the prostatic urethra. In a paper on Urethritis Chronica Cystica, published elsewhere,[2] I have alluded to the frequency of the occurrence of cysts in the posterior urethra. It is an easy matter to destroy them with the endourethral knife (Figs. 4 and 5). This is made up of two parts, a sheath and a blade. The sheath is provided with two legs that telescope into the groove at the distal end of the catheter channel. The fine blade is hinged on a long wire handle which passes through the catheter channel and out through the catheter outlet. By moving the wire handle toward the observer, the knife blade can be drawn into the sheath. By pushing the shank forward, the knife is caused to emerge and drop downward, appearing outside of the fenestra. Having adjusted the sheath to the end of the telescope (Fig. 6) the wire handle is capped with a rubber tip which closes the catheter outlet and prevents leakage of the irrigating fluid. The proper point for fixation of the knife is determined in advance by pushing out the knife as far as it will go and observing its position through the telescope. This accomplished, the governing screw is made tight at a point just beyond the rubber tip. In this way the forward motion of the knife is limited and we prevent a possible dislodgment of the knife. While making the examination the blade is hidden, and when the cyst appears in the middle of the field the knife is made to protrude and puncture it. By a to and fro movement of the whole instrument, incision or rupture of the cysts is accomplished. Fig. 4 shows the knife in the concealed position, and Fig. 5 the egress and downward inclination of the blade. The puncture of a cyst is illustrated in Fig. 7.

For work in an air medium the following accessories may be employed: 1. Applicators; 2, aspirator injector; 3, endoscopic light; 4, electrolytic needle; and, 5, galvanocautery needle.

Direct endoscopic manipulations. For direct illumination and direct vision it is necessary that the sheath be freed from all fluid. To accomplish this we either use cotton applicators or the special aspirator injector[3] illustrated by Fig. 8. It is composed of two long tubes attached to a supporting cylinder that telescopes by a cone into the ocular end of the sheath. The lower larger tube is designed for aspirating the sheath, a rubber bulb being employed for suction. The upper finer tube serves as an instillator.

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[2] Folia Urologica.

[3] A similar device has already been employed by Goldschmidt in his urethroscope.

My technique is the following: With the lesion in the field, the left hand holds the sheath securely in place while the telescope is removed. The aspirator injector is now introduced and the fluid in the sheath is evacuated by suction of the bulb. Having thus dried out the sheath, we may assure ourselves of the presence of the lesions in the fenestra by using the endoscopic light (Fig. 9). If we do not care to view that part we may proceed to the injection of the medicating fluid through the injector, which lies in the upper part of the sheath and whose outlet is adjusted to the center of the fenestra.

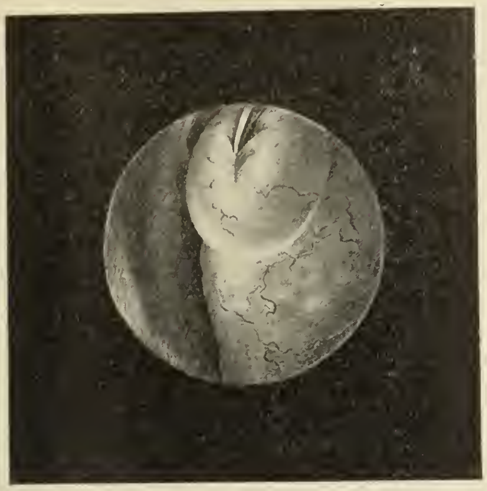

Fig. 7.—Cyst on the left side wall of the posterior urethra being pierced by the knife. The inner field of the cystourethroscope has a diameter somewhat less than half of that shown in the illustration.

For direct illumination of the mucous membrane I use an endoscopic lamp that fits into the sheath tightly by a slip joint. The aboral end of the light carrier (Fig. 9) is fitted with a glass window that effectually closes the sheath, permitting of dilatation with air if we wish. A small plus convex lens may be added so as to make vision more distinct and to produce a moderate amount of enlargement. Fig. 10 shows the appearance of the colliculus with direct endoscopy. The colliculus usually prolapses into the fenestra and almost completely fills it. With the endoscopic light *in situ* a fine galvanocautery electrode, an electrolytic needle, curette, or grasping forceps may be introduced, as the occasion may require.

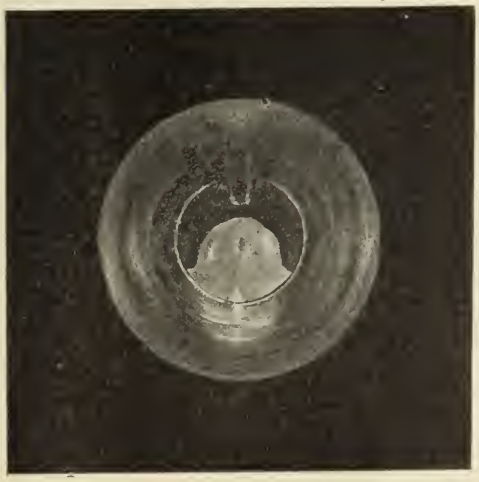

Fig. 10.—Direct endoscopic view of the verumontanum with the light carrier lying above. Magnified somewhat more than two diameters.

40 East Forty-first Street.

REPORT OF A CASE OF HYPERNEPHROMA.

By J. Allen Jackson, M. D.,
Philadelphia,
Chief Resident Physician, Philadelphia Hospital for the Insane.

In reporting this case I have made no attempt to incorporate a review of the literature of hypernephroma. Hall (1) in his classical article, Hypernephroma, with the reports of his many interesting cases has also given the bibliography and to this review we can add only the following case.

For the sake of brevity we briefly enumerate the clinical history, which is meagre, and does not cast any light upon the clinical manifestation of the tumor. The case, clinically, was one of pulmonary tuberculosis with an enterocolitis and the tumor was found at the post mortem examination. There were no evidences of metastasis, the adrenals were free, and the growth was confined to the right kidney; and a brief description of this organ comprises the body of the report.

Case. F. M., white, male, aged eighty, was admitted to this institution May 25, 1909. His mental and physical condition at that time are unknown, except that he was said to have been melancholy for one year. Since admission his physical condition had been good. His mental condition was diagnosticated as melancholia. On September 10, 1909, patient manifested symptoms of enterocolitis with tenderness over the abdomen. These symptoms persisted until death which ensued October 20, 1909.

Autopsy Report. Body of a fairly well preserved senile male, white; rigor and livor mortis present. Hair, gray, scanty over anterior portion of forehead. Pupils, measured 3 mm. Teeth absent, tongue coated; and there were no evidences of ankylosis, injuries or deformities.

Circulatory system: The examination of the pericardium was negative. The fluid in the sac was normal. The heart was negative, save for slight thickening of the aortic valves and a macula albida on the anterior surface of the right ventricle. The aorta was atheromatous.

Respiratory system: There were marked chronic bilateral pleural adhesions. There was tuberculosis of the right and left lung. Examination of the trachea, larynx, and nares was negative.

Alimentary system: Examination of the peritonæum was negative. The liver showed evidences of a perihepatitis upon its diaphragmatic surface, as well as congestion. The pancreas showed chronic interstitial changes with marked sclerosis of the vessels. The large intestines showed a few peasized tubercular ulcers here and there throughout the colon. The small intestines, stomach, and œsophagus gave negative results.

Genitourinary system: The left kidney showed chronic interstitial changes. The right kidney weighed 255 grammes, measured 14 x 6 x 5 cm. On its anterior surface near the middle portion there was a distinct tumor. Externally the tumor showed projecting nodules; it was lobulated in appearance and paler than the kidney structure proper. On sectioning, the tumor was distinctly circumscribed, light yellow in color, and there was no evidence of necrosis but near the adjacent kidney structure it was rather soft in consistency. The tumor measured 2.5 x 7 x 2 cm. The tumor possessed the chemical properties as described by Hall (1), that is, it decolorized boiled starch stained with iodine in from three to five minutes. Microscopically the tumor was apparently surrounded by a capsule and was composed of cell bodies resting upon a framework of connective tissue. The arrangements of these simulated a glandular structure. There were distinct columns of cells, some apparently cut transversely, others longitudinally, separated by fibrous septa exceedingly rich in bloodvessels. The cells appear as colorless bodies with distinct outline with irregularly placed nuclei.

Glandular system: The spleen showed a thickened capsule and post mortem changes. The adrenals upon gross inspection were negative—but microscopically showed congestion.

Nervous system: There was a chronic meningitis, and atrophy of the gyri of the frontal convolutions. The choroid plexuses were cystic. Sections from cerebrum, pons, medulla, and cervical cord were negative with Weigert's stain.

Through the courtesy of Dr. H. B. Lowder, of the Boston City Hospital, we were able to have Dr. F. B. Mallory, of Boston, confirm our diagnosis of hypernephroma, basing the microscopical diagnosis upon the "colorless cell body with very definite cell outline." It is indeed a pleasure to express our thanks to Dr. Mallory for his kindness and Dr. Lowder for his courtesy.

In conclusion it is interesting to note the age of the patient, the latent nature of the growth, the absence of metastasis, and the presence of a tumor in a case of pulmonary tuberculosis. I am indebted to Dr. P. J. Watters for the clinical notes and to Dr. E. D. Martin, assistant pathologist, for assisting in the examinations.

REFERENCES.

1. Hall. *Archives of Internal Medicine*, ii, No. 4, pp. 355 and 357.

THIRTY-FOURTH AND PINE STREETS.

THE CARBON COMPOUNDS OF ARSENIC IN THE TREATMENT OF SYPHILIS.

By SCOTT C. RUNNELS, M. D.,
Indianapolis.

(*Concluded from page* 1058.)

Nine rabbits of the same litter, all apparently of the same degree of health, weighing from 350 to 400 grammes and about one month old, were injected with various amounts of sodium cacodylate from the pure sample.

No. 1. 4:40 p. m. injected in the subcutaneous tissue over the abdomen with 1.75 grammes immediately showed symptoms of incoordination.

4:45, paralysis of right hind leg.

5:00, paralysis gone, reflexes heightened.

5:10, screamed, a piercing cry continued till the breath was exhausted. Several times the animals emitted this cry but did not seem to be otherwise in pain.

5:20, very restless.

5:30, fell on his side.

5:34, screamed.

5:36, comatose.

5:45, spasms of the diaphragm.

5:50, died.

Autopsy: Stomach and intestines normal, except for an abnormal amount of mucus in the stomach. Kidneys much swollen and injected, with structure obliterated. Liver abnormally congested and swollen; more than a cubic centimetre of serosanguinous fluid in each pleural cavity. Lungs congested; auricles engorged, ventricles empty. Subarachnoid hæmorrhages into the cord and injection of the cerebral dura. Arsenical odor of all the tissues twenty-four hours after death.

No. 2. 4:42 p. m. Injected 0.75 grammes immediately heightened reflexes and temporary incoordination of right hind leg.

5:00, decided choreiform movements.

5:10, lethargic.

5:12, screamed, followed by convulsion. It will be noted that the effects on No. 2 began earlier and are more profound than those of No. 1, although No. 1 had the larger dose.

5:20, screamed.

5:35, respirations 140.

6:08, diaphragmatic spasms.

6:11, died.

Autopsy: Two mesenteric tuberculous glands, 1 mm. long, found near the renal arteries; kidneys congested. Liver anæmic, very friable, and granular. Pleural cavities contained a quantity of clear fluid. Lungs highly congested; auricles engorged, ventricles empty. Subarachnoid hæmorrhage of cord; injection of the base of the brain. Arsenical odor to all tissues.

No. 3. Rectal temperature, 101.7° F., before injection.

3:33, injected 1 gramme.

3:35, spastic, heightened reflexes, restless.

3:40, normal.

4:00, drowsy.

5:00, acts ill, respirations 150.

5:15, temperature, 101.8° F.

6:00, fore legs paralyzed.

6:10, comatose.

6:56, spasm of the diaphragm.

6:59, died. Although this rabbit received more than either of the next three following the effects were not so profound and he lived longer.

Autopsy: Mesenteric tuberculous glands, twice the size of those found in No. 2. Kidneys over twice normal size. Liver swollen and congested, friable and granular. Pleural cavities contained a quantity of clear fluid. Lungs congested, auricles engorged, ventricles empty. Subarachnoid hæmorrhages of cord. Arsenical odor.

No. 4. Temperature, 100° F., before injection.

3:25, 0.75 gramme injected. Squealed during injection Immediately had right lateral paralysis, with ptosis of eyelid, ear dropped and hind leg outstretched.

3:40, ear and eye recovered, both hind legs paralyzed.

3:42, got up and walked two feet, dropped over.

4:00, still paralyzed, heightened reflexes.

4:15, respirations 150.

4:30, respirations normal.

4:38, screams.

4:40, temperature 100° F.

4:50, screams.

5:00, spasms of diaphragm.

5:05, died.

No. 5. 5. Temperature, 99.8° F., before injection.

3:18, 0.5 gramme injected; half minute later had decided symptoms of incoordination, with paralysis of hind legs.

3:35, normal.

3:45, asleep, arsenical breath.

4:00, drowsy but can be roused.

5:00, not absolutely comatose.

5:05, convulsion.

5:10, temperature 99.7° F.

5:20, screamed.

5:45, died without spasm of diaphragm, respiration getting gradually weaker.

Autopsy: Injection of arachnoid arteries, slight hæmorrhages.

No. 6. Temperature, 99° F., before injection.

3:10 injected 0.25 gramme.

3:12, incoordination of hind legs.

3:25, normal.

3:45, asleep, arsenical breath.

4:00, drowsy.

5:00, sick, hind legs incoordinate.

5:05, temperature 99° F.

6:00, comatose.

6:10, died without spasm.

No. 7. 9:30, 0.12 gramme injected, slight incoordination.

9:52, sleeping.

9:57, ran around but was groggy.

10:07, slight spasm, arsenical breath.

10:18, runs around violently, apparently some disturbance of vision.

10:45, spasmodic breathing, wakes up and tears around.

12:00, normal.

Next day lively, apparently all right.

10:03, 0.12 gramme injected.
10:08, dizzy.
10:30, asleep.
11:00, sleeping all right when roused.
11:15, diarrhœa.
3:30, found dead on return, cold; profuse diarrhœa evident.

Autopsy: Multiple abscesses (25 to 30) of liver each containing about 0.2 c.c. yellow pus. Intestines congested, kidney also heart and lungs normal. Death probably due to faulty technique and infection.

No. 8. 9:32, injected 0.06 gramme, no immediate effect.
9:55, lively.
10:20, sleepy; arsenical breath.
10:35, continually jumps up from sleep to scratch violently from which he drops over exhausted; respirations 150.
10:50, spasms of hind legs.
12:00, normal.
Second day.
10:05, injected 0.12 grammes.
10:30, arsenical odor, otherwise normal.
10:45, drowsy.
11:00, asleep but normal.
1:00, lively and normal.
Third day.
9:43, injected 0.12 gramme.
10:00, lively.
10:15, arsenical odor.
11:00, asleep but normal.
11:45, normal.

Fourth day. Rabbit apparently in best of health, lively and hungry, was eaten by a dog, so far as known the dog did not suffer, although he consumed both rabbits No. 8 and 9.

No. 9. 10:34, injected 0.03 gramme.
9:45, dizzy, falls.
9:55, lively.
10:20, sleeping.
10:34, twitch.
10:40, wakes up and eats, respirations 140.
10:50, arsenical breath.
12:00, normal.
Second day, 10:06 injected 0.12 gramme.
10:30, arsenical breath.
10:45, drowsy.
12:00, normal.
Third day, 9:40; injected 0.12 gramme, arsenical breath.
11:00, asleep.
11:45, dizzy.
1:00, normal.

Fourth day, rabbit apparently in best of health, eaten by dog.

The author while making these provings on rabbits developed symptoms of arsenic poisoning: headache, shooting pains, aching of the muscles, sore spot in the vault of the pharynx, profuse watery coryza, and frequent sneezing. These symptoms were very different from the colds usually experienced and reappeared whenever a fresh exposure was made. Another point of some interest is that all the fleas on the dead rabbits were dead. It was observed that those on the rabbits that did not die were either stuporous when the arsenical odor was most pronounced or escaped from their host.

Sodium cacodylate, therefore, in pure sample, shows quite a toxic action on rabbits. Its toxicology, however, is not the same as that of arsenic trioxide, As_2O_3, the digestive tract being practically untouched. The symptoms were mostly of nervous origin and death was by paralysis of the respiration due to inflammation of the cord. Toxic action is shown on the nervous system, kidneys, liver, lungs, heart, and possibly the eyes.

The maximum dose for safety was 0.12 gramme for 400 grammes rabbits, which weight for weight compares to a 25 gramme (400 grains) dose for a man of 150 pounds weight. It is therefore comparatively safe if pure.

It is to be noted that the animal that succumbed with the greatest rapidity to the action of sodium cacodylate was tuberculous, as was also the one who showed the greatest resistance to the poisonous action and who at the same time had an elevated temperature. Excluding these two the rest, who were as far as demonstrated healthy, had a marked uniformity in their reactions. It would therefore seem that the presence of an infection has a distinct effect on the action of the drug. From the small number of experiments, however, it would be impossible to say just what the effect is, leaving open the field for further investigation.

Conclusions: From the experiments, it would be fair to draw the conclusion that persons free from other diseases than the animal infection for which the treatment was being given, especially those whose nervous system, heart, lungs, kidneys, and eyes were normal, could take the fresh pure sodium cacodylate in large doses (0.5 gramme) with absolute safety. And it is probable that even those who have some contraindication will find the sodium cacodylate a safer drug than dioxydiamidoarsenobensol, as in all the history of its use there are only three or four cases of serious effects reported from the use of samples of known purity.

The fate of the cacodylates in the body is of importance. Imbert and Bodel (x8) find that the greater part is eliminated unchanged in the urine during the first day, but that there is a fraction, 0.003 gramme, discoverable daily for a month. Dawes and Jackson (x33), while injecting one gramme daily into a dog for seventeen days recovered one seventh of the amount injected unchanged from the urine. After the twelfth day they were able to find from 0.2 to 0.4 milligramme per diem of arsenic trioxide, As_2O_3. After the animal was killed they found "inorganic arsenic" present in all the tissues, with no macroscopic pathology. Arsenic was also found in the fæces. The body reduces small amounts of the cacodylates to the oxides of arsenic, but large doses must be long continued before there are bad effects. Hefter (x13) states that the major portion passes unchanged from the urine. The liver, stomach, and mucous membrane of the intestines and to a less extent the muscles and the kidney reduce small amounts of the cacodylates to cacodyl oxide. This reduction can be accomplished outside of the body by aqueous extract of liver (x13). The odor of the breath is due to oxide of cacodyl (x7).

Since sodium cacodylate is to some extent cumulative and since the danger of reduction of the organic radicle is greater when large quantities are present, it would seem that interrupted administration is advisable, a week under treatment and a week off, in alternation. The remedy can be given orally, by rectum or by injection, the latter is most free from disagreeable effects. It is best injected warm (x33).

The sleeping sickness is analogous to syphilis because its infective agent, the trypanosome, is an animal parasite. It is found by Bagshawe (x35) to yield more readily to the arsenolates than to any other agent. The use of atoxyl and soamin, sodium paramidophenolarsenate (x40) causes the disappearance of the infection from the blood for as long as the medication is continued. In most instances, however, there is a recurrence of the infection, sometimes as late as three years after. In animals, however, complete sterilization of the blood is obtained. Even when the parasite is not completely obliterated it has been proved that the "organic arsenic" assists in the production of immunity. It would seem, therefore, that by the use of a more perfect arsenic compound that complete deliverance from the trypanosome might be effected.

The experiences with atoxyl and soamin in Africa have, however, not been entirely satisfactory. Despite the claims of the manufacturers these drugs are dangerous. Lundie and Blakie (x38) report blindness commonly consequent to the use of soamin. Bagshawe (x35) warns against the use of both on account of blindness. Ried (x34) while lauding the virtues of arsenic compounds emphasizes their dangers. Both drugs have been used in syphilis and malaria with good success (x40 and x39), but on account of the dangers their use has been entirely abandoned.

It will be seen that there are other arsenic compounds besides "606" that have the power of acting on the parasite with greater force than on the person, but when given in sufficient dosage to eradicate the disease absolutely, many have too great a toxic effect upon the individual. Ehrlich, in his review of the 630 compounds, has made a most thorough search, but he has by no means exhausted the possibilities. And his experience in finding several of the desired compounds, from "418" to the "hyperideal," of differing suitability, proves that it is probable that a yet more perfect agent will be found, free from the disadvantages of "606." The investigation must be continued until it is definitely known that no possible compound of arsenic remains untried that could be used successfully to combat the animal infections. For in a search of such importance, where the welfare of millions yet unborn and millions more, now living, either infected or still to become so, is at stake, no possibility of betterment can be overlooked.

Smith, the dean of the School of Tropical Medicine at Philadelphia, recently announces that the causative organism of epidemic cerebrospinal meningitis is a trypanosome. It would be most interesting to see what effect the arsenic preparations, either the cacodylates or "606," would have on this animal parasite.

In conclusion it would seem that Murphy's suggestion to use the cacodylates in the treatment of syphilis, since Ehrlich has demonstrated the power of arsenic compounds was most excellent. Of the carbon compounds of arsenic which have a destructive power over the animal infections, atoxyl and soamin are too dangerous for use, the cacodylates are sufficiently safe and appear to have the desired action to a marked extent, while Ehrlich's "606" is not free from disadvantages. Therefore it would be well to use the cacodylates for a sufficiently long time to find if it be not as good and possibly a more ideal agent than dioxydiamidoarsenobenzol.

Conclusions.

From a theoretical standpoint sodium cacodylate has several advantages over dioxydiamidoarsenobenzol.

First: The latter cannot be obtained in this country at present, while the former is at hand and it is only necessary to test its purity before using.

Second: "606" will probably be very expensive, while the cost of the other is merely nominal.

Third: "606" causes pain on injection, while the cacodylates do not.

Fourth: Of the two the instability of the dioxydiamidoarsenobenzol is the more marked, for while the cacodylates break down in a few months, giving off poisonous products, it is necessary to ship the other in hermetically sealed vacuum capsules to prevent immediate decomposition.

Fifth: The maximum dose of the cacodylates, for safety, 0.3 gramme per kilogramme, is twice the size of that of "606," 0.15 gramme per kilogramme (34), proving that in the experimental animal it is much more safe.

Sixth: The arsenic content of "606" is thirty-four per cent., while that of sodium cacodylate is 46.8 per cent.; the latter, therefore, is capable of delivering, weight for weight, thirty-eight per cent. more arsenic. Theoretically there seems to be some grounds for belief that sodium cacodylate should be more than a third more efficacious.

Seventh: The entire dose of sodium cacodylate is dissolved in the blood, whereas a large percentage of "606" (40) remains unabsorbed and therefore unacted upon at the site of injection. Which means that those who have been treated with "606" afterward carry around in their persons indeterminate amounts of arsenic. This has in no way had any therapeutic action and is worse than wasted.

It should be said in favor of Ehrlich's compound, however, that that portion of it which enters the blood possibly breaks down with more ease and therefore delivers its arsenic content more readily than does sodium cacodylate.

In the opinion of the author the cacodylates have proved themselves worthy of a fair trial. For the only way of determining their practical value and their worth as compared with dioxydiamidoarsenobenzol is by the therapeutic application. Those who have the facilities for the Wassermann reaction and spirochætæ determination have here open before them a field for work. However, neither drug has had as yet sufficient trial to prove that it is the ultimate specific, but such results have been reported from both that we have great hope that the problem of the diseases of animal parasitic origin has been solved.

But the author, while advising the use of the cacodylates for this class of diseases, must emphasize the necessity for purity and the danger of deterioration. Use no sample that you have not tested, and if kept for any length of time retest the purity. Keep in glass stoppered or rubber corked bottles and make up all solutions fresh on the day of use.

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CENTENARIANS.

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It must be admitted that the production of centenarians has become a much more familiar feature of the accepted records of human existence within the past few decades. Some observers of the undoubted fact would explain it by the more accurate registration of births and deaths, which embalms facts that were formerly allowed to perish—either by negligence or scepticism, or a combination of both. Others, who happen to be optimistic believers in the efficacy of the methods of modern hygiene and sanitation, would attribute the prolongation of the span of human existence to the results obtained under their combined preventive and preservative influences. For the philosophic inquirer into such matters should bear in mind in the investigation of facts of this group, that, even at a date so late as that of one of the opening years of the nineteenth century, the authenticity of the records of centenarian survival of *Homo sapiens,* and even the physical possibility of its occurrence, were very suspiciously questioned by the budding materialist and sceptical scientist. And, indeed, those of us who have read a good deal more than the average in the byways of biographical record will, quite surely, be the readiest to admit that many items of this class were inventions of the manufacturers of folklore and fairy tales—in those good old days when genuine registration of births and authentic baptismal records were not so carefully carried out and so securely preserved as they have been of recent years. But, on the other hand, the fact has now become satisfactorily demonstrable that although the army of multicentenarians has been reduced in numbers, a certain limited remnant has been privileged by endowment with scientific salvation, and being permanently placed in a position which is biographically and physiologically impregnable. It is now some years ago that a special notice of the death of a lady resident at Richmond, in the County of Surrey (England), appeared in the leading medical journals of Great Britain. The authenticity of her record was absolutely unquestionable, and her age at the close of life was 108 years and 4 months. The announcement and resulting comment had the effect of eliciting from Mr. T. E. Young (one of the highest living authorities on the subject) a paragraph of printed comment which informed the reader that since the publication of his well known book on the subject (in 1899) he had obtained incontrovertible evidence of the existence of twenty-two additional cases. And, indeed, all the evidence which is now before the scientific world goes to show that the span of average human life is lengthening; so that we have this consoling consideration to offer its small contributory item of comfort to the wearied in an age of hurry and worry—universally expanding, as regards both national and individual progress, as these detestable features of modern existence unquestionably are. The additional physical comforts, the sanitary improvements, and the almost universal diffusion of some of the sound elementary facts and concepts of hygiene, and allied sciences, have more than compensated, upon the whole, for the excess of wear and tear produced by the increased speed which is now so necessary for competition in the race for material success, and the progressive emulation which the growth of numbers and the gradual elevation of the altitude of the higher test standard of skilled labor—mental as well as physical—have necessarily created, in every locality and in every profession and occupation of life. So that there is some sound reason underlying the expression of partisan opinion that the ground is gradually sliding from beneath the feet of the ignoble army of croaking pessimists. Accordingly we have some enthusiastic scientists—nearly all, it should be observed in passing, to be found among the more enviable members of that proud and privileged tribe who have not yet passed the demarcating age line of forty—who express with (some apparent) confidence the prophetic hope that before the end of this our present twentieth century the genesis of all the pathogenic microbes which manufacture the diseases fatal to human existence will be placed under absolute control. If not then actually wiped off the face of the earth, their entrance into, and subsequent development within, the tissues of the human body will have been effectively provided against. The gigantic strides which the nineteenth century so successfully recorded in scientific progress and conquest would actually seem to afford some reasonable grounds for the assurance of such an outlook. Then we are further told that thenceforward the office of the physician will no longer be intended to include the cure of disease. He will only require to maintain the efficiency of his scouts and outposts, in order to receive due and timely warning of every (if any) invasion of the microscopic enemy—the survivors being available only at a distant source. And all his other professional energies may, under those hypothetic conditions, be devoted to the provision of means for the lengthening of human life, and the progressive development, expansion, strengthening, and educating, of the physical and mental powers of man—in his environment of perfect sanitation.

One of the most interesting of the cases of traditional centenarianism is that of the celebrated Countess of Desmond, who has been credited by some with the inspiration of the doggerel couplet:

She lived to the age of a hundred and ten,
And died by a fall from a cherry tree then.

The "scientific historian" of the present appears disposed to regard with a skeptical eye the record of the hearsay evidence which appears to have quite satisfied the romantic judgment of that phenomenal genius, Sir Walter Raleigh, whose adventurous disposition made him one of the pioneer explorers of New England territory, and whose poetic, and decidedly quizzical, faculty of diversion into geographical nomenclature gave its name to the State of Virginia. And he regards with a critical feeling which is far more nearly allied to pure contempt the almost puerile credulity of the famous Lord Chancellor Bacon, who received (and retailed) with avowed respect the testimony that she "lived till she was seven score years old, that she did Dentire twice or thrice; Casting her old teeth, and others Comming in their Place." But there seems, nevertheless, to be no reasonable grounds for doubting that this longlived scion of an interesting and noble stock did survive to an age well beyond the limits of her century.

A very curious fact which is undeniably associated with the generalization of centenarian biography, is also one which should surely tend to limit the confidence of assertion that characterizes the aggressive scientific dogmatism which grew to so gigantic proportions in the course of the latter half of the nineteenth century. We refer to the absolute proof which has been furnished by the collection of the data of all the authentic experiences, that persons of all habits and occupations, even the most unsanitary and the most dangerous, are to be found enrolled on the list of centenarians—and that, accordingly, no Procrustean rule is suitable to the attainment of record breaking longevity, any more than to that of any other of the cardinal virtues of our physical existence. The North American Indian, who lived a life of continued exposure, in all the unchanging primitiveness of habits and of personal cosmetics and the modern scientific chemist, who spent all his active hours in the narrow space of a close laboratory—and very usually inhaling in quantity the foul gases of his own experiments—have both lived to the age of 103! The roll of names whose bearers have survived their hundredth birthday will be found on examination to include philosophers and criminals, soldiers and cowards, teetotallers and drunkards, globetrotters and hermits, nobles and servants, millionaires and paupers. We learn, on credible authority, that "lady Lawson, who died at the age of 116, never practised ablutions of any kind, or hardly in any degree, because, as she alleged, those persons who washed themselves were always taking cold or laying the foundation of some dreadful disorder." And, moreover, we find that "her apartment was only occasionally swept out, but never washed; the windows were so encrusted with dirt that they hardly admitted a ray of light." In the presence of such facts, our sanitary dogmatists can surely afford to be a little more modest than they sometimes seem disposed to be!

Some few years ago Dr. Roger S. Tracy, who had formerly been registrar of records in the Department of Health, New York city, published a highly instructive brochure which bore the title *Longevity in Our Time*. His specimen series of life tables showed that during the previous half century the "expectation of life" for males at birth had increased by nearly four years. In referring to the Jews, he pointed out the interesting facts that "the ghetto in Rome was the healthiest quarter of the city, and at the present day the Jewish quarter of New York, the most crowded and, until recently, the dirtiest part of the town, has the lowest death rate." These facts he attributed to the elimination of the weak during the terrible ordeals of the past two thousand years, combined with their "rigid adherence to the admirable sanitary code of Moses." It is, of course, very obvious, to even the most superficial observer, that many lives are now prolonged which would have inevitably been lost under the conditions of a generation ago. Then again, in considering the actual increase of longevity, there are several aspects in which it may be viewed. We should make clear to ourselves whether we mean by increased longevity that a larger proportion of individuals attain to the centenarian rank, or that the average age at the time of death has become greater. These questions would require a discussion too voluminous for present limits. But let us express a concluding hope that we will hear no more of the possible 1,000 year limit which Methuselah was so near attaining. The first—the Chaldæan—time period (of grouping of successive nights and days) was noted, very unavoidably and obviously, by the renovation of the moon. The monthly reign of the "queen of night" was the original interval which has been so long and so widely misinterpreted "year"; and this convincing specimen of the psychological efficacy of the *fallacy of equivocation* accounts for the mythical age of the famous patriarch!

34 York Street.

THE TREATMENT OF DIABETES MELLITUS.

By H. C. Sawyer, M. D.,
San Francisco.

PATHOGENESIS OF DIABETES MELLITUS.

This concerns itself with the pathological physiology of carbohydrate metabolism. It is conceded that no special organ or organs has a monopoly on metabolism, on the contrary, it is a function in which every cell in the organism participates. To enumerate all the ætiological factors involved in glycosuria is not the object of this contribution. Recent observers maintain that the pancreas acts vicariously for the liver in the metabolism of sugars and it is reasonable to assume that both organs are usually compromised in diabetes mellitus.

THERAPEUTIC PATHOLOGY.

Unfortunately, therapeutic nihilism dominates scientific medicine and even experimental pharmacology has migrated too far afield from the clinic. Many of the observations of the clinician are rejected by the laboratory investigator unless accompanied by proof tantamount to a chemical reaction. If such scientific control is permitted, we will only heed the call of the laboratory which substitutes a test tube for a patient. As the matter now stands, we must ascertain the pathology of a disease before we can contribute anything concerning its therapy and all this, despite the fact, that the diseases of which we know the least are the diseases which we treat most successfully.

VASOMOTOR THEORY OF DIABETES.

Dr. Albert Abrams, of San Francisco, in a recent book,[1] discusses diabetes mellitus as a vasomotor neurosis and quotes, *naturam morborum curationes ostendunt*. In this sense, the pathology of many diseases is revealed by the results of treatment. In accordance with the preceding, Abrams contends that, there are many diseases regarded as distinct affections which are merely symptomatic of a fundamental condition, viz., instability of the nervous mechanism which controls vascular tone. Thus it is, that two or more diseases like diabetes and obesity grow from a common pathogenic trunk. The author, as a result of his method of treatment, accepts the neurotic theory of diabetes, which supposes it to be caused by a vasomotor paralysis, resulting in a greater quantity of blood flowing through the liver. In his book, he has shown that the tone of the vasomotor system may be augmented by concussion of the seventh cervical spine; the latter corresponding as he has demonstrated empirically, to the chief subsidiary vasoconstrictor centre in the spinal cord. Here concussion is employed as a mechanic stimulus and the stimuli are only effective when they are applied with sufficient rapidity. For this purpose a special concussor is employed; but for the details of the apparatus the reader is referred to the work on *Spondylotherapy*. The following results are given in the treatment of ten diabetics by the method in question: 1. No results in three cases; 2, the percentage of sugar very much reduced in four cases; 3, slight reduction in the percentage of sugar in one case; 4, disappearance of glycosuria in two cases; the duration of treatment in the latter cases extended over a period of one and two months respectively. Abrams emphasizes the fact that in the treatment of the diabetics absolutely no special diet was enjoined with the object of testing more effectively the treatment employed.

REPORT OF A CASE.

Female, fifty-two years of age, and weighing about 180 pounds presented herself April 9, 1910, with a history of incessant thirst and frequent urination owing to the excretion of enormous quantities of urine. The latter at this time had a specific gravity of 1,040 and contained eight per cent. of sugar; the reaction for diacetic acid was positive.

The following represented the average daily menu prior to the commencement of treatment which consisted of daily concussion of the seventh cervical spine of an average duration of about ten minutes: Breakfast.—Coffee, toast, and scrambled eggs. Luncheon.—Cold chicken, chop, asparagus, potatoes, and several slices of bread. Dinner.—Soup, egg salad, chicken, several slices of bread, asparagus, ice cream, and coffee. The foregoing diet was permitted during the treatment.

Within one week, polydipsia and polyuria had completely evanesced, but sugar continued in the urine varying in percentage from 5 to 0.77 per cent. on May 7, 1910.

After the latter date and, up to the present time of writing there was absolutely no trace of sugar in the urine with the exception of one day when it reappeared temporarily after the patient partook, at a picnic, a bottle of rootbeer and ingested many other aliments containing an excess of sugar.

Comments.—The reappearance of sugar on a single day was of no moment and indicated a physiological glycosuria which occurs in certain persons of apparently good health after the rapid ingestion of an excessive quantity of carbohydrates. From the evidence presented, the case in question can only be regarded as one of true diabetes mellitus. The rationale of the method consists of diminishing the quantity of blood flowing through the liver by augmenting the tone of the splanchnic bloodvessels and thus improving the nutrition of the hepatic cells concerned in the warehousing of carbohydrates.

By the method of percussing the liver as suggested by Abrams, enlargement of the organ may be demonstrated in diabetes and a diminution of its volume may be noted after a single concussion séance. The latter fact is probably due to a diminished volume of blood in the liver and is not a true liver reflex such as is elicited by concussion of the spinous processes of the first three lumbar vertebræ.

Twenty séances of the concussion treatment in the foregoing case were necessary before the sugar disappeared from the urine.

246 Powell Street.

CHOLELITHIASIS.

*With Primary Carcinoma of Liver and Chronic Fæcal Obstruction: Report of Case.**

By Cheney M. Stimson, M. D.,
Philadelphia,
Assistant Demonstrator of Gynæcology, Jefferson Medical College.

Case. E. S., widow, sixty-seven years of age, was first seen May 8, 1910, at 12:30 a. m. Patient was suffering with intense colicky pains throughout the abdomen and back, slight nausea and vomiting, eructations, some distention.

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[1] *Spondylotherapy.*

*Read before the Jefferson Clinical Society, September 23, 1910.

Bowels were constipated. There was no fever; pulse and respiration were normal. The pain was so intense that morphine, ¼ grain, hypodermically, was necessary for relief. A course of calomel was ordered, followed by magnesium sulphate in the morning.

The history of the case showed that patient had had a similar attack one month before, which left her with very poor digestion and occasional abdominal pains.

Family history: Mother, one brother, and one sister died of cancer of stomach.

Past history: Aside from diseases of childhood patient had always been a well woman.

At the next visit, May 9th, patient was feeling somewhat better although considerable pain was still present in the abdomen. The bowels had moved and some gas had been expelled.

Physical examination showed a well nourished woman apparently sixty-five years of age, of intelligent expression, weight about 150 pounds. Skin clear. Her physical condition, except for the abdomen, was good; heart and lungs apparently normal; organs of special sense intact. Careful palpation of the abdomen revealed the presence of a smooth, hard, oblong mass extending from the right iliac fossa to the liver, with which it was apparently continuous. The mass was about five centimetres in diameter freely movable from side to side, and could be felt to glide upward and downward with respiratory movements of the diaphragm. It gave a flat note to percussion, no sound to auscultation, and was somewhat tender to pressure. The urine was dark straw colored, cloudy, acid, contained a trace of albumin, much amorphous urates, and a few granular casts, no blood. Fæces were clay colored, of offensive odor and small quantity.

Operation was urged by both the writer and Dr. E. H. Wiggins, who also saw the case, but patient would not give her consent. Her condition remained the same for two weeks, during which various intestinal antiseptics, cathartics, and enemata were used without beneficial results. She took liquid nourishment which was retained most of the time. Morphine had to be administered daily to relieve the pain. At this time, two weeks after the onset, jaundice developed which in three days was intense and so continued until the time of patient's death. At no time were there chills or fever. Emaciation became marked, and the patient, gradually failing, in two months died. For two weeks before death the bowels could not be made to move either by purgatives or enemata. Fluid injected into the rectum would return unchanged. No nourishment was retained by the stomach.

The family consented to our opening the abdomen, although permission for a complete autopsy was not given. Briefly the following pathological conditions were found:

The gallbladder extended five centimetres below the costal margin, was filled with yellowish mucopus, and contained also a solitary gallstone, oblong in shape, the size of a small pea nut. At the neck of the gallbladder was a firm mass of new growth about the size of the gallstone, extending up into the hilum of the liver involving the common, the cystic, and the hepatic ducts in a mass of adhesions obliterating the lumina. The liver was of normal size and contour; at only one place besides the hilum did it show external evidence of disease; this was upon the superior surface of the right lobe where a hard, firm, grayish nodule, three centimetres in diameter projected. On section the liver was found to be composed mostly of firm, grayish white, new growth which had evidently started at the hilum and extended uniformly throughout the organ to within two centimetres of the surface leaving only a shell of uninvolved liver tissue. There was no glandular enlargement in the gastrohepatic omentum. Stomach, spleen, and kidneys were intact.

The mass in the right iliac region was found to be large, bowel filled with a hard, clay colored, cylindrical fæcal mass extending from the caput coli to the hepatic flexure. It could be moved in the bowel and had given rise to no ulceration. That entire obstruction was not at first caused by this mass is evidenced by the fact that there was some fæcal movements up to within two weeks of the patient's death when obstruction became complete.

The interesting points in this case are the existence conjointly of the three pathological conditions, namely: cholelithiasis, primary carcinoma of the liver, and chronic fæcal obstruction, and also the presence of almost continuous intense pain from the time patient was confined to bed.

1801 CAYUGA STREET.

COCAINE INTOXICATION.*

By N. S. YAWGER, M. D.,
Philadelphia,
Assistant Physician in the Dispensary for Nervous Diseases in the Hospital of the University of Pennsylvania.

There is considerable matter of historic interest associated with the drug which we know as coca. Because of its property of imparting endurance, the Incas of Peru regarded it as the "divine plant," and the natives of some of the South American countries attributed to it marvelous powers, employing it in their religious rites and sacrifices, and regarding it with both reverence and superstition. It was used, in time of war, to increase their strength and for the prevention of hunger and thirst; they also indulged in it for the pleasurable intoxication which it produced. It has been said that the natives pluck the leaves from the bushes by the wayside to chew; the leaves are selected as they are sweet and rich in the more volatile alkaloids and contain a low percentage of cocaine; those containing a larger quantity of the alkaloid have a bitter taste. After the gathering, the leaves are dried and cured with as much care as is bestowed upon the preparation of tea or tobacco. Coca is used extensively by those engaged in heavy labor, and the quantity apportioned to each worker depends upon the task he has to perform; one or two handfuls, which is equivalent to one or two ounces, is the average amount for a day's consumption. The leaves are chewed with a small quantity of a limelike substance which is obtained from the ashes after the burning of certain plants, shells, or limestone. Under the sustaining influence of this drug, the natives carry heavy burdens for long distances and do other laborious work without hunger or fatigue. Strangely enough, it is said their health does not become undermined from this use, and they often live to an advanced age.

The statements concerning the sustaining power of coca would be almost incredible were they not so well authenticated by physicians and others. W. B. Stevenson, who wrote of his twenty years' residence in South America, found "that the natives in the mines, or when traveling, derived such sustenance from chewing the leaves that they frequently took no food for four or five days, though constantly working; and that they told him that with a good supply of coca they felt neither hunger, thirst, nor fatigue, and that, without inconvenience or injury, they could remain eight or ten days without sleep." Ordinarily, the use of coca gives rise to no special sensation; there may be an absence of the customary desire for food and sleep, but if an unusual demand is made upon the mind or body its influence is then felt.

We shall now consider the effect that cocaine, the active alkaloid of coca, has upon the white race. The drug is mostly used in the form of cocaine hydrochloride. Degrees of individual susceptibility vary widely; in some less than one grain will give rise to toxic symptoms, while in others, two or more grains may be taken without such disturbance; from about eight grains upward is regarded as a fatal dose, though considerably larger doses have been recovered from. A moderate dose is followed by a slight rise in blood pressure, a pleasant sensation of bodily warmth, dilatation of the pupils, exaltation, self assurance, unusual mental activity, a general feeling of well being, and increased capacity for physical effort; the individual appears somewhat excited. This is followed by a stage of depression, a loss of muscular activity, and a somewhat accelerated heart action. If the dose is a poisonous one, the respiratory movements are somewhat increased, the pupils are dilated at first but contracted toward the end, there is nausea and vomiting, an intermittent pulse, profuse perspiration, cyanosis, muscle cramps and general muscular weakness, epileptiform convulsions, and finally Cheyne-Stokes breathing. Instead of unconsciousness, a violent mania may develop. If the patient recovers, he is often in a highly nervous state for days or even for weeks after. When death ensues, it results from paralysis of the respiratory centre together with exhaustion following the severe convulsions.

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*Read before the Northwestern Medical Society of Philadelphia, October 3, 1910.

The continued use of cocaine is followed by the most direful results. Before considering these, it may be of interest to attempt to explain the occurrence of these disastrous effects in the white race, since the Indians of South America seem to escape the more serious consequences. For centuries millions of these natives have used coca and had it produced in them marked mental and physical deterioration, the fact could hardly have escaped notice. In the first place we are not Indians; the greatest number of our people who become addicted to the use of cocaine are the debilitated, neurotic, and persons who are naturally perverse, and of course we have a larger percentage of these than can possibly be found among any primitive people. The use of the alkaloid being followed by such pleasant mental and bodily effects, makes it particularly attractive to us because of the many annoyances and affections attendant upon civilization, such as delayed hopes, overwork, lack of exercise, and bad air with their consequent disorders; all these find prompt relief after the use of this drug; the taking of the powerful alkaloid doubtless has a much more deleterious effect than the chewing of the leaf, many of the natives accustomed to its use live in mountainous districts, lead an active life, such as mining and the making of long journeys, and live in an invigorating climate; finally, the Indian selects a leaf that is sweet and therefore contains a small percentage of cocaine; he uses but three portions each day and usually does not increase this allowance during his lifetime.

Cocaine came into general use shortly after 1884, when its value as a local anæsthetic in ophthalmic surgery was discovered. Because of its producing exhilaration and mental exaltation, as well as being in general strikingly opposite in its body action to morphine, it was soon adopted as a means of overcoming the morphine habit; it has been used extensively for this purpose and at first appeared to act most happily, but soon it was found that the patient almost invariably became addicted to this drug, and morphine is the lesser of the two evils. Its use is unsafe in the withdrawal of morphine or in the breaking of any other drug habit. From periodical use at first, cocaine takers soon drift into its continued use, and since its effects soon wear off, it is resorted to at frequent intervals; the debilitated and neurotic take to it readily, and the poorer classes fall easy victims to its charms; the habit is common among the negroes in some parts of the south, and some criminals are users of the drug. Most cocainists use it in conjunction with morphine, often with alcohol, and rarely with chloral hydrate. It comes as a great temporary solace to those who are already exhausted from the excesses of other drugs. Persons who have found themselves drifting into its continued use, and who still have had sufficient strength of mind to throw off the habit, say that the intense longing never dies out, and being aware of its enslaving power, they are afraid to come in contact with it; I know physicians who will not keep it in their office on this account. Cocaine is the first of drugs to enthrall its devotees, luring them to an almost hopeless captivity; soon it induces physical, mental, and moral deterioration, often leading rapidly to death, but rarely to a permanent insanity. My own experience with these patients has come from a six years' residence as medical superintendent in a private hospital where addicts of some sort were always present, in the Philadelphia Hospital for the Insane, and also in the detention wards of the Philadelphia General Hospital; it may be of interest to add that but few cocaine users are transferred from the detention wards to the Insane Hospital; they seldom become chronic insane patients, but usually die in a marasmic condition or are carried off by some intercurrent affection.

The symptoms presented by cocaine addicts are those of rapid emaciation, the individual is distressed of countenance, is restless, talkative, and secretive, the skin has a pale, yellowish, withered appearance, the eyes are deeply sunken and the pupils dilated, there is muscular weakness and tremors, the extremities are cold, and there are attacks of weakness from cardiac irregularity; business, which is at first plunged into only to be left unfinished, is finally abandoned. Sometimes from the poisonous effects of the drug and perhaps also from the marasmic condition, there develops an hallucinatory phase beginning with great restlessness and distrust, from which the individual passes rapidly into a state of irresponsibility; the special senses may all be involved, vile language is often heard, and they hear persecutory threats shouted at them; they imagine to observe small black spots wandering over a light surface, see vermin of various sorts about the room or upon the clothing; a very common sensation experienced is that of insects crawling under the skin; this is known as Magnan's sign and has been termed the "cocaine bug"; this sensation of bodies under the skin is characteristic of cocainism; needlelike pricks are felt and many other painful sensations are experienced; the patient may believe these are due to the machinations of his fancied persecutors, a homicidal insanity may develop at once and he may arm himself for the destruction of his supposed enemies; accusations of marital infidelity are quite common; he has now become an exceedingly dangerous person; rarely, in this condition of mental and physical torture, he commits suicide.

When a combination of drugs is used, the diagnosis may be quite difficult. The cocainist is erratic, secretive, distrustful, and inclined to be solitary. This is usually not true of the morphine user. It differs from the alcoholic psychosis in the peculiar form of skin sensations, the more severe character of the maniacal manifestations, and in the absence of albuminuria, the administration of a single dose of cocaine will aggravate the condition, while little or no effect will result if the patient is an alcoholic. From paranoia, it may be observed that the delusions are usually less systematized, less constant, and more numerous.

If the patient is treated early, the prognosis is perhaps more favorable than in either morphine or whiskey addicts; however, except in the early stage, a permanent cure is extraordinarily rare. Those individuals who use a combination of drugs are the least hopeful.

In cases of acute poisoning where the drug has been taken internally, the stomach should be washed out at once; respiratory failure is to be met with alcohol, camphor, aromatic spirit of ammonia, and perhaps oxygen and artificial respiration; a rapid injection of normal saline solution has proved beneficial.

The chronic patients may be treated by stopping the drug at once, by rapidly reducing it, or it may be slowly withdrawn. In many cases its immediate withdrawal will be the most satisfactory, for the reason that during the gradual reduction, it sometimes happens that the patient will not remain under treatment when the discomfort incident to the partial deprivation manifests itself strongly; in those states where institutional detention is lawful, these patients are more easily managed by confinement. When maniacal symptoms are present, they usually subside when the individual can no longer obtain the poison. The suffering attendant upon deprivation is not so great as in the morphinist, but there is danger of the symptoms of collapse for some time after the drug has been withdrawn. Strychnine is a sustaining remedy; the mental distress may be relieved by hyocyamus, valerian, or large doses of bromide; the appearance of collapse should be met by the administration of cardiac and respiratory stimulants; the insomnia is best overcome by prolonged baths; good food should be given at frequent intervals.

1728 Chestnut Street.

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Correspondence.

LETTER FROM EDINBURGH.

Professor Metchnikoff and the Royal Society of Edinburgh.—Rest and Movement in Tuberculosis.—Fungous Affections of the Finger Nails.—Clinical Laboratory for Glasgow Infirmary.—The Cinematograph in Medicine.

Edinburgh, *November 15, 1910.*

A number of distinguished scientists were elected honorary fellows of the Royal Society of Edinburgh at a meeting held on November 7th. Medicine was represented by Elie Metchnikoff, vice director of the Pasteur Institute and member of the Academy of Medicine, Paris. Two distinguished Americans were also elected honorary fellows at the same meeting: Professor A. A. Michelson, of Chicago, and Professor F. W. Putnam, of Harvard University.

Dr. R. W. Philip gave a lecture on Rest and Movement in Tuberculosis to the Edinburgh Sanitary Society on November 11th. He showed the value of the open air treatment, stating that it was his profound conviction that, were the vitalizing properties of open air truly understood and realized, the larger part of the disease would cease to be. He then showed how far rest was essential, and when and to what extent movement and exercise came in. The toxine of tuberculosis was essentially a muscle poison. Rest was essential while the toxine was actively at work, but once the lesion became less active, natural movement assisted muscle repair. If we could adjust the activity so nicely as to lead to the discharge of just so much toxine as would cause a serviceable and not an excessive reaction, we might hope to achieve by natural methods what we sought to effect in the treatment of tuberculosis by vaccine therapy, that was, by the use of tuberculin. The amount of activity allowed must in every case be determined with exactness. On this account treatment could be more efficiently initiated in a hospital, where the patients were more or less constantly under the eye of a trained observer and where increase of dose was sanctioned only where no contraindication was present. Under the conditions of hospital life the degree of tolerance on the part of the patient could be studied with great exactness. Dr. Philip outlined the scheme of physical treatment which has gradually been elaborated and systematized during the past eight or ten years at the Royal Victoria Hospital, and said that for the majority of the patients under treatment this régime, as carried out within the hospital, was found to be complete. In the case of some twenty-five per cent. of the patients, however, there was need for something more. It was for this class of persons that the farm colony was conceived. The colony was a kind of postgraduate school suited to the requirements of a certain number of individuals who needed more prolonged surveillance and direction than was convenient at the hospital.

At a meeting of the Edinburgh Medico-Chirurgical Society held on November 2nd, Dr. R. Cranston Low read an interesting paper on Fungous Affections of the Finger Nails. That such affections were more common than was supposed was shown by the fact that Dr. Low had treated no fewer than nineteen cases during the last three years. He devided his cases into three groups: (1) Ringworm; (2) favus; (3) fungi of unknown origin. Sixteen out of the nineteen belonged to the first variety and a large proportion of these were in females. The disease was common to all ages, the youngest patient treated being ten and the oldest fifty-eight years, but the majority were between twenty and thirty. The affection was rare in connection with ringworm of the scalp, and usually existed in conjunction with tinea corporis. Dr. Low described fully the appearance and condition of the nails. Treatment had for its object the removal of as much of the diseased nail as possible. The best results were obtained by daily scraping and subsequent application on absorbent cotton, for half an hour, of a solution of a drachm of potassium iodide in half an ounce each of liquor potassæ and distilled water. After this, a solution of corrosive sublimate was applied for twenty-four hours and the finger covered with an india rubber finger stall. The nail became black and soft and was easily removed. Dr. Norman Walker's method was to apply ordinary Fehling's solution on lint and cover with a finger stall for a day or two. The nail became soft and was easily removed. After removal, a solution of copper sulphate (ten grains to the ounce) was used as a continuous dressing.

In my last letter I referred to the new clinical laboratory recently opened at the Edinburgh Infirmary, and it is now the turn of the Victoria Infirmary, Glasgow, to acknowledge the gift of £5,000 from an anonymous donor for a similar purpose. The Western Infirmary of Glasgow has nearly completed the building for its clinical laboratory, and with the new laboratory at the Victoria Infirmary Glasgow should be well equipped for clinical research.

At a recent meeting of the Glasgow Medico-Chirurgical Society Dr. Levaditi, of the Pasteur Institute, Paris, gave a lecture on phagocytosis, illustrated by means of cinematograph films. The movements of spirochætæ and trypanosomes and the process of phagocytosis by white blood cells were shown on the screen in actual operation by a series of wonderfully clear records, giving an excellent example of the advances of projection demonstration.

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Therapeutical Notes.

General Treatment of Gonorrhœa.—According to the *Practitioner* for November, 1910, Carles gives the following as serving greatly to improve the general condition, and which should be used during the height of the attack. At the outset, alkalies have a fortunate effect recognized by all who have tried them, although their action appears not very explainable. The bicarbonate or the salicylate of soda, the former for choice, can be ordered in any form. Fournier advises:—

℞ Sodium bicarbonate,	ʒij;
Pulverized sugar,	ʒiiss;
Lemon juice,	♏xv.

To be dissolved in two pints of water and taken during the day.

Balzer gives:—

℞ Sodium bicarbonate,	ʒv;
Sodium salicylate,	ʒiiss.

One or two teaspoonfuls in two pints of lemonade.

Less esteemed is the "Traveller's powder," which, however, can by no means be put on one side, thanks to its old established usefulness and its emollient qualities, although it certainly does contain too great a quantity of gum acacia and sugar of milk. Carle has altered its composition by adding sodium bicarbonate to it, and orders it regularly, as it appears to satisfy the majority of patients:—

℞ Sodium bicarbonate,	℥iss;
Sugar,	℥i;
Pulverized acacia,	aa ʒiiss;
Pulverized licorice,	
Pulverized marshmallow,	
Extract of vanilla,	♏v;
Potassium nitrate,	ʒiiss,
Essence of lemon,	♏v.

Misce. Fiat pulvis.
Sign. One teaspoonful in a glass of water twice a day.

This prescription is elastic and can be altered at will.

The tissues can also be narcotized, as is commonly done in Austria:—

℞ Syrup of opium,	ʒiiss;
Decoction of linseed,	ʒxvi.

Misce. Fiat mistura.
Sig.: One tablespoonful to be taken every two hours.

Another mixture is:—

℞ Syrup of opium,	āā ℥iss;
Syrup of tolu,	
Infusion of orange,	ad ℥xvj.

Misce. Fiat mistura.

One tablespoonful to be taken in the afternoon and evening. Every two hours at most.

In the same way act the resinous tisanes, fir buds, uva ursi, buchu, tar water, etc., in small doses. At this stage, if not from the first, at least eight to ten days afterward, the so called urinary antiseptics can be given. The best known are the alkali benzoates, and salol. Both of these may be given together in a cachet, fifteen grains of salol and four grains of sodium benzoate. Two are given every day. Urotropin and helmitol are later additions to this class. Guiard thinks so well of urotropin that he orders fifteen grains to be taken every day in two cachets.

Potion in Prostatic Irritation.—In hypertrophy of the prostate gland where acute irritability of the bladder exists this condition may be relieved (*Journal of the American Medical Association*, November 12, 1910) by the following simple prescription:

℞ Potassium citrate,	ʒix;
Wintergreen water,	℥vi.

M. et Sig.: Two teaspoonfuls in water, three times a day, after meals.

If there is chronic cystitis, no drug is probably more valuable than hexamethylenamine, which may be given as follows:

℞ Hexamethylenamine,	ʒiiss;

Fac chartulas No. xx.
Sig.: A powder in half a glass of water, three times a day, between meals.

Treatment of Epistaxis.—Quoting from *Progrès médical*, the *Practioner* for November publishes the conclusions arrived at by Bourgeois after a study of practical methods for stopping epistaxis. When the hæmorrhage is not severe, the patient should be seated in a cool place with the head well up. He must be relieved of all clothing about the neck which may interfere with the return circulation. The hæmorrhage is nearly always due to the rupture of an arteriole in the anterior part of the septum. A pledget of absorbent cotton should be introduced, not into the orifice of the nostril, but into that of the nasal fossa. The cotton should be wet with hot hydrogen dioxide water, of 12 volumes strength, or in a 50 per cent. solution of antipyrine in hot water. By means of the ala a moderate degree of pressure is kept up by the finger upon the pledget. If there is a relapse, examination and rhinological treatment must be instituted as soon as possible after the bleeding. On the anterior part of the quadrangular cartilage are seen one or more small arterial branches in varicose condition; on their track a small brown clot points out the seat of the recent hæmorrhage. Some 1 in 10 solution of cocaine is applied on absorbent cotton. The clot comes away when the cotton is removed, and bleeding must be avoided as much as possible. The bleeding point is then cauterized, and afterward all varicosities in the course of the arterioles. The galvanic cautery to a dull red may be used, or a crystal of chromic acid or of silver nitrate. Chromic acid causes a yellow scab. The patient must not blow his nose, and should introduce twice a day a small quantity of borated petrolatum.

In the case of serious hæmorrhage, such as always relieves a general condition of high arterial tension, or results from delayed coagulation, quick and efficient anterior plugging is often necessary. It can be effected by Gariel's balloon as improved by Laurens. The deflated balloon is covered outside with ointment:—

℞ Cocaine hydrochloride,	gr. ij;
Solution of adrenalin chloride,	♏iij;
Petrolatum,	āā ʒiss.
Wool fat,	

Misce. Fiat unguentum.

It is then introduced along the floor of the nasal fossa by means of Lubet-Barbon's smooth bladed forceps. It is immediately inflated with pressure sufficient to hold it in place. At the end of twenty-four hours the air is allowed to escape, and the bag is withdrawn. Failing a bag, a gauze plug must be used, made up of strips, two fifths of an inch wide and about three inches long, of medicated gauze (ferripyrin or iodoform), or of sterilized plain gauze. The patient is laid down with his head low, because of the condition of syncope. By help of a mirror and speculum, the forceps is passed along the floor of the nasal fossa, carrying one end of a gauze strip close to the posterior nares, the other end being left in view in the nostril. The forceps is withdrawn and again introduced closed, in order to spread the gauze lightly over the floor. A second strip is then spread over the first, and so on, until the last can only be packed in without the speculum above and behind. The bleeding should be stopped in five or ten minutes. This may be determined by looking at the uvula and back of the pharynx to see if any blood trickles down. This plug must be left in place for forty-eight hours; a shorter time runs the risk of allowing fresh bleeding, a longer that of septic complications. To extract, the patient must be on his back without a pillow. One teaspoonful—the spoon being previously sterilized in a flame—of peroxide solution containing boric acid is poured upon the outer end of the plug, which is then removed strip by strip by means of the forceps. As each strip is taken away more boric oxygen water is dropped in. This method of unplugging is antiseptic, and at the same time causes neither pain nor bleeding. The general treatment is in syncopal conditions, injections of camphorated oil or caffeine, hot bottles, rest in bed, and repeated drinks, in small quantities at a time, of milk and water. Injections of serum are indicated for large traumatic hæmorrhage, but for spontaneous bleeding these are only necessary in the event of a feeble pulse. In many cases the pulse, in spite of the loss of blood, remains strong and hard. To increase the tension in such case would be dangerous. Saline injections are dangerous if nephritis is present. They should only be given when the general condition is serious and the pulse small and feeble. Not more than from 150 to 200 c.c. should be given at one time.

Treatment of the Acute Stage of Infantile Paralysis.—Hernaman-Jones, in *Folia Therapeutica* for October, 1910, after affirming that the theory that the disease is an acute specific infection, having its seat in the spinal cord, and there giving rise to a hæmorrhagic inflammation, is a rational view to take in the present state of our knowledge, says it should not be overlooked that the intestinal tract is also suspected. Accordingly he advises to begin treatment with a good dose of calomel, so as to lower the blood pressure, and get rid of any intestinal irritant. He gives a brief summary of the therapeutic measures favored by various authorities, and follows with his own views regarding treatment as follows: Pain should be assuaged if severe. The application over the painful part of the spine of a linseed poultice containing a little mustard is most efficacious. Morphine may be necessary. The common prejudice against giving this drug to children should not, the author says, cause us to withhold it where to do so is cruel. In the vast majority of cases one fortieth of a grain may be given hypodermically with safety to a child two years old. After the first violence of onset is over, bromides will usually be found sufficient to control any remaining irritation. For the purpose of diminishing blood pressure and lessening the force and frequency of the heart's action, after the initial dose of calomel, the author considers aconite and spiritus ætheris nitrosi as the most suitable agents.

An attempt, he says, should be made to eliminate the toxines circulating in the blood. Potassium citrate internally and frequent hot baths will stimulate kidneys and skin respectively. A mixture of the following may therefore be prescribed and continued for some days:

℞ Tincture of aconite,	♏i;
Spirit of nitrous ether,	♏v;
Potassium citrate,	gr. x;
Syrup of lemon,	♏xv;
Water,	ad ʒii.

M et Sig.: Two teaspoonfuls every two hours in water.

The above quantities are suitable for a child from two to three years old.

A Calmative in Biliary Colic.—Robin (*Journal des praticiens*, through *L'Union pharmaceutique*, November, 1910) considers it a mistake to administer morphine hypodermically in the treatment of biliary colic, as it hinders the passage of the calculus. He prefers to give a sedative of the following composition:

℞ Morphine hydrochloride,	gr. ¾;
Potassium bromide,	ʒiiss;
Cherrylaurel water,	ʒiiss;
Syrup of ether [French Codex],	℥i;
Valerian water [French Codex],	℥iii.

M. et Sig.: One tablespoonful every half hour until relief is given or three spoonfuls are taken. Usually two doses will suffice.

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ECONOMY IN HOSPITAL MANAGEMENT.

It is highly necessary that our hospitals should be maintained at as small expense as is consistent with the full possibility of their usefulness. Nobody would wish them to stint their supplies to a point even approaching inadequacy, and none of us would countenance them in furnishing the sick with anything short in quality of the best to be procured. It is not meant that their fittings should be luxurious or that they should feed their patients on food in which the wealthy revel; the idea is, simply, that the sick should be made comfortable as regards their housing and provided with nutritious and appetizing sustenance. In the case of a large hospital, to answer these reasonable requirements calls for a large expenditure, and it is in every way desirable that the cost should be kept within proper limits.

There is abundant experience to show that a great saving in purchasing supplies for households may be effected by means of cooperation, and practically the needs of a hospital are, on a large scale, those of a family. There has recently been inaugurated in New York a systematic association of the great private hospitals which promises to accomplish a great deal in the way of keeping down expenses without impairing the efficiency of the institutions concerned. It is by the establishment of the Hospital Bureau of Standards and Supplies, representing at present the following institutions: The Flower Hospital, the French Benevolent Society, the Lincoln Hospital and Home, the Manhattan Eye, Ear, and Throat Hospital, the Manhattan Maternity and Dispensary, the Methodist Episcopal Hospital, Mount Sinai Hospital, the New York Hospital, the New York Postgraduate Medical School and Hospital, the Presbyterian Hospital, the Roosevelt Hospital, St. Luke's Hospital, Columbia University (including the Sloane Maternity Hospital and the Vanderbilt Clinic), and St. Bartholomew's Clinic and Parish House.

This list, it will be seen, includes the names of almost all the great private hospitals of New York. By "private" hospitals we mean those that are not under national, State, or municipal control. Their affairs are in the hands of astute and devoted men, and we may be sure that they never would have entered upon this undertaking unless those men had seen in it a reasonable promise of benefit. Their judgment in the matter has already been borne out by events, for it appears by the first annual report of the bureau's Executive Committee, covering the seven months ending on September 30, 1910, that very considerable savings have been effected on purchases made under agreements negotiated by the bureau, in some instances more than enough to cover assessments. If such a showing is made thus early, it is easy to foresee still greater results when the work of the bureau is more advanced.

PAUL EHRLICH.

On account of the worldwide interest taken in "606," our readers will naturally be glad to know some facts concerning its discoverer, Professor Paul Ehrlich. He was born on March 14, 1854, at Strehlen, Prussian Silesia, and studied medicine at Breslau, Freiburg, Strassburg, and Leipsic, from which latter university he was graduated in 1878. He then became assistant at the university clinics in Berlin. In 1888 he was recognized as a Privatdozent, became, in 1890, assistant to Koch at the Institution for Infectious Diseases, and a year later, in 1891, was appointed assistant professor. In 1896 he became director of the Laboratory for Serum Examination connected with this institution. When, in 1899, the Institute for Experimental Therapeutics was opened at Frankfort on the Main, Ehrlich became its director. In 1908 he received the Nobel prize.

Ehrlich represents the results of modern German medical education. The ideas promulgated by a Virchow have produced a Koch, a von Behring, and an Ehrlich. But while Koch and von Behring have used the products of living or dead microorganisms to form a serum for inoculation, made artificially outside the body, that it may be used when injected as a weapon against the attacks of the bacteria or bacilli in the body, Ehrlich has produced a drug the composition of which he arrived at by logical experiments so that he might reach the same result. As a medical student in his second year (so he tells us in his latest book) he became interested in the question of the distribution of a given drug in the body. He has followed up this thought, and searched for a drug which would destroy only the attacking parasites, not the host and parasite together, that is, to use his own words, "to find a remedy which would be *parasitotropic* without being *organotropic*". Such a preparation would have to combine with the attacking germ, that is, the cells constituting the preparation would have to swallow the germ and thus destroy it. He thus formulated his side chain theory, which is beautifully described by Adami in the first volume of his *Principles of Pathology*. Ehrlich's experiments were started with the study of drugs against trypanosomes, and he concluded that there must be special affinities in the cells for certain chemical groups, and these he called *chemoceptors*, and, as he used arsenical preparations, he called them *arsenoceptors*. He thus became the founder of chemotherapeutics. While formerly the chemist prepared drugs to be experimented with by the clinician, the chemotherapeutist now formulates compounds which the chemist constructs. In this way Ehrlich followed up the arsenic compounds, and after many, many trials, changes, and improvements, placed, carefully and well prepared, dioxydiamidoarsenobenzol or "salvarsan," to give it its trade name, before the profession. May his hopes be fulfilled and may suffering mankind be correspondingly relieved.

FERTILIZATION AND CELL OXIDATIONS.

Those who realize the supreme importance to life of oxidations within the cell may be astonished to learn that under certain conditions oxidations may lead to death of the cell, and that life of the cell can be prolonged if the oxidation is limited. In his interesting experiments on artificial parthenogenesis, as mentioned in his recent Harvey Lecture, Jacques Loeb found that the eggs removed from star fish could not be fertilized in that condition, but that they had first to be left for a time in sea water. Such eggs, spoken of as matured eggs, unless they were fertilized would die after a few hours. The interesting discovery was made that if the matured eggs were kept in sea water deprived of oxygen, or if oxidation in the cells was diminished by adding small quantities of cyanide to the water, the eggs would remain alive for a considerable time. That this effect is really due to decreased oxidation and not to any inhibition of bacterial action can be shown by collecting and keeping the eggs under sterile conditions, but in the presence of oxygen. It will be found that they die rapidly. In remarkable contrast to the rapid death of unfertilized matured eggs in the presence of oxygen is the normal development of such eggs when fertilized.

The fact that the unfertilized egg dies and the fertilized egg does not is of general application in biology, and fertilization of the ovum is thus seen to be a life saving act. What, then, is this fertilization? According to Hertwig, the essence of fertilization was the fusion of two nuclei. Like all purely morphological explanations this gives only an incomplete conception of what really takes place. The researches of Loeb have thrown considerable light on this problem. In his studies on artificial parthenogenesis this investigator sought to reproduce the chemical effect of sperm fertilization by means of definite chemical substances. The first effect of sperm fertilization is the development of the so called cortical membrane. The same effect can be produced if matured eggs are treated with weak solutions of the lower fatty acids, such as formic or butyric acid. In either case, as soon as the membrane has been formed, there is a sudden rise in the rate of oxidation and the egg begins to develop. In the case of the sperm fertilized egg the development continues normally, but in the chemically fertilized egg disintegration very quickly supervenes and leads to the entire destruction of the embryo.

This disintegration can be delayed for some time if the eggs are kept in sea water deprived of oxygen. If eggs are fertilized by their proper sperm, the phenomena accompanying fertilization take place so rapidly that it is difficult to follow them. However, if they are fertilized with sperm of another species, the changes are so slow that they can readily be studied in detail. Thus, when sea urchin eggs are treated with star fish sperm, one may observe that there are two kind of embryos. In the one kind there is merely membrane formation, and the sperm is seen lying in contact with the outside. In the other the sperm has actually penetrated the interior of the egg. The first kind disintegrates and dies after development has proceeded but slightly; the other goes on in the ordinary way, at least for several days. This shows that the sperm contains a diffusible substance which causes membrane formation, and another substance, introduced when the sperm penetrates the interior of the egg, which prevents disintegration. The diffusible substance would appear to be similar to the lower fatty acids. The nature of the other substance and its mode of action are still obscure. From the work thus far done it would seem that as soon as an egg matures increased oxidations begin. These oxidations kill the egg because they give rise to a poison which should be eliminated or neutralized. Fertilization carries a substance which neutralizes this poison and allows the oxidations to go on without causing disintegration of the egg.

LEPROSY BACILLI IN THE FÆCES.

The mode by which leprosy is transmitted is a subject on which there is still difference of opinion. There seems to be a decided difference in the degree of contagiousness in cities and in the country. It does not spread readily in cities—in fact, isolated cases have been discovered in which after the patients had lived for many years in a certain neighborhood no other cases have developed. In the country a focus of infection is formed if one leprous individual enters a healthy district. At the Leprosy Congress in Bergen, Norway, last year, Boeck suggested that the cause of this disparity might be found in the lack of proper drainage in the country, which seemed plausible in view of the fact that he had in one case found leprosy bacilli in the fæces.

In the October issue of the *Norsk Magazin for Laegevidenskaben* Boeck describes two other cases of tubercular leprosy in which the bacilli were present in enormous numbers in the fæces. When we consider that in country districts in Norway human fæces are used as a fertilizer, it is very possible that the disease is transmitted through uncooked vegetables and polluted drinking water, and that the bacilli adhere to the feet and are carried into the dwellings. Furthermore, inoculation may occur through abrasions, as the people often go barefoot.

Boeck's two cases were far advanced, with extensive ulcers in the mouth, pharynx, and larynx. The autopsies revealed no lesion of the gastrointestinal tract or of the accessory organs, either of a leprous or of a tuberculous nature. No bacilli were found in the gallbladder or bileducts, but they were present in great numbers in the stomach contents. They must therefore have gained access to the intestinal tract from the ulcers in the mouth and pharynx, which explains why they are not found in the fæces in early cases or in the anæsthetic form.

To determine how long leprosy bacilli can live outside the body, fæces containing the bacilli were kept at room temperature in a glass merely covered with paper, so as not to exclude the air, from October, 1909, to April, 1910. The glass was filled up from time to time with ordinary spring water. It was found that they had multiplied since October, and, while a greater number stained yellow with Unna's Victoria blue-saffron method, the majority stained as intensely blue as they did in October, showing that their vitality had not decreased.

THE BIRTH RATE IN RURAL DISTRICTS.

The recent statistics of the New York State Department of Health cast a sidelight on the "race suicide" question. From them the startling fact appears that in the cities the excess of births over deaths is 5,947, while in rural localities, which have always been regarded as comparatively free from any artificial checking of increase in population as well as conducing to greater average longevity, the excess is only thirty-seven. The greater sophistication of city dwellers, a direct influence of more artificial modes of life, leading to a sacrifice of the parental instinct to the accompanying needs, and a shorter life ratio have hitherto been regarded as the influential factors of a disproportion between births and deaths in cities. To what is the change attributable? In the farming communities children are, or used to be, a distinct asset after their very earliest years, as by the aid they gave to the general work they more than paid for their keep and even added to the family wealth. Is it possible that the increased educational requirements are telling in the country districts also? Under the old *régime,* the peasantry of any country—its "brawn and sinew"—multiplied and thrived out of proportion with the "upper classes." Is the recent introduction of "modern conveniences" into even isolated country districts having at first a depressing effect on the stamina of the race, just as it had on the city dwellers, who, however, are now becoming adjusted to their environment and returning toward the normal? If that is the explanation there need be no disquietude over a temporary condition. But the condition appears so anomalous as to demand prompt investigation as to its cause or causes.

THE "GUTTA PERCHA" CATHETER.

There has lately been published a handbook of nursing in which we find catheters enumerated according to the material of which they are composed, including those made of gutta percha. Is there in use at the present time such an instrument as a gutta percha catheter? We have never seen one and never before known the thing to be mentioned. We are aware that soft rubber is sometimes confounded with gutta percha, but it seems to us that a nurse who is qualified to write a textbook ought not to fall into such error.

Obituary.

LANDON B. EDWARDS, M. D.,
of Richmond.

Dr. Edwards died on Sunday, November 27th, at the age of sixty-five years. He had long been active in professional matters, especially in medical journalism. He established the *Virginia Medical Monthly,* which of late years has been published twice a month under the title of the *Virginia Medical Semimonthly.* He was its editor up to the time of his death, and it was always a dignified and valuable journal.

SAMUEL ALEXANDER, M. D.,
of New York.

Dr. Alexander died on Tuesday, November 29th, in consequence of disease of the vermiform appendix, for which he had undergone an operation. He was fifty-two years old. For many years he had been connected with the surgical service of Bellevue Hospital, and at the time of his death he was a professor of genitourinary surgery in the Cornell University Medical College. He was much respected and liked in the profession.

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News Items.

Dr. Lefferts Retires from Practice.—Dr. George M. Lefferts, of New York, announces his retirement from the practice of medicine.

The Western Pennsylvania Public Health Conference was held in Pittsburgh on Tuesday, Wednesday, and Thursday, November 29th, and 30th, and December 1st.

The Medical Department of the University of Pittsburgh moved from the old medical college building on Brereton Avenue, to the new Pennsylvania Hall, on Monday, November 21st.

Concert for St. Mark's Hospital.—About $3,000 was realized from the Thanksgiving concert, held in Carnegie Hall, on Saturday evening, November 26th, for the benefit of St. Mark's Hospital.

The American Red Cross Society will meet in annual session in Washington, D. C., on December 6th. An interesting programme has been arranged.

A County Hospital for Saratoga, N. Y.—The Board of Supervisors of Saratoga County, N. Y., have decided that the county should have a tuberculosis hospital, and that the entire county board should act in selecting a site.

The Smallpox Situation in Michigan.—Smallpox of a virulent type is reported to exist in several cities in Michigan, but conditions are said to be improving. The health authorities believe that they have the outbreak pretty well under control, and it is hoped that the worst is over.

The Harvey Society Lectures.—Dr. Harvey Cushing, clinical professor of surgery at Johns Hopkins University, will deliver the next lecture in the course at the New York Academy of Medicine on Saturday evening, December 10th. His subject will be Certain Clinical Aspects of Dyspituitarism.

The Physicians' Motor Club, of Philadelphia, held its final quarterly meeting for this year on the evening of November 22d. This club was organized in August, 1909, and its membership has been gradually increasing until it now has 152 members enrolled. Its officers are: Dr. S. Leon Gans, president; first vice-president, Dr. L. Webster Fox; second vice-president, Dr. Solomon Solis-Cohen; third vice-president, Dr. E. Montgomery; secretary, Dr. Sylvester James Deekan; and treasurer, Dr. J. Gurney Taylor.

To Enlarge Howard Hospital, Philadelphia.—Howard Hospital, at Broad and Catharine Streets, Philadelphia, has purchased the dwellings at 1344 and 1346 Catharine Street and 1345 and 1347 Webster Street, for a consideration of nearly $10,000. The lot will be used as a site for an addition to the rear of the hospital.

A New Maternity Hospital in Brooklyn.—A Jewish Maternity Hospital for Brooklyn along the lines of a similar institution at 270-272 East Broadway, Manhattan, is planned by the Brooklyn Borough members of the hospital. The success of the Manhattan hospital has proved it to meet a needed want and an effort will be made to establish one in Brooklyn.

An Institution for Feeble Minded Women in Philadelphia.—A campaign is being conducted in Philadelphia for the establishment in that city of an institution for the care of feeble minded women, and the next legislature, which meets in January, will be asked to enact such legislation as shall provide for the care of these unfortunate members of the community.

A National Tuberculosis Sanatorium for Negroes.—Announcement is made that James Polk Taylor, of Colorado Springs, a former slave, has given to the Charles Sumner Tuberculosis Association 480 acres of land at Calhan, near Colorado Springs, as a site for a national tuberculosis sanatorium for negroes. According to present plans the building to be erected on this site will cost $300,000.

The American Guild of St. Luke.—The next meeting of this society will be held at the Catholic Club, No. 120 West Fifty-ninth Street, New York, on Thursday, December 8, 1910, at 8:30 p. m. The subject for discussion will be Is Sterilization of the Habitual Criminal Justifiable? Physicians who are interested are invited to attend. Dr. Charles F. Nammack is president of the Guild, and Dr. James J. Walsh is secretary.

The Gaynor Fund for St. Mary's Hospital.—Mr. John D. Crimmins, chairman of the Gaynor Hospital Fund Committee, announced on November 29th that the fund collected was slightly in excess of $14,000. He said the committee was considering the advisability of permanently endowing a bed in St. Mary's Hospital in the Mayor's name, which would cost $5,000, and that it was desired to present a purse of $10,000 to the hospital.

The Smallpox Epidemic among the Arapahoe Indians.—It is said that the report that ninety-seven deaths in four days from smallpox had occurred among the Arapahoe Indians, of Wyoming, is somewhat exaggerated. The smallpox situation among the Indians is well in hand, and only a few deaths so far have occurred. A rigid quarantine is being maintained, and there is no fear that the epidemic will spread.

Physicians Wanted as Internes at the Montefiore Home.—Announcement is made that two salaried positions are to be filled by competitive examination, before December 22d, on the staff of internes of the country sanatorium of the Montefiore Home, Bedford, N. Y. These positions offer an unusual opportunity for work in physical diagnosis, rhinolaryngology, and phthisiotherapy. The term of service is six months. Applications should be sent to Dr. Ernst Danziger, chairman of the Examination Committee, 63 West Ninetieth Street, New York.

Dr. White's Successor.—It is reported that Dr. Edward Martin, professor of clinical surgery in the University of Pennsylvania, is to be named to succeed Dr. J. William White as John Rhea Barton Professor of Surgery, in the university. Dr. Martin has held the chair of clinical surgery in the University of Pennsylvania since 1885, two years after his graduation. In May, 1903, he was appointed director of the Department of Health and Charities, a position which he held for two years and a half, resigning in October, 1905. He is fifty years of age.

The Hospital Bureau of Standards and Supplies, No. 381 Fourth Avenue, New York, has presented its first annual report, for the seven months ending September 30, 1910. The bureau shows substantial results in standardization and savings in the purchase of hospital and institutional supplies. The membership is composed of fourteen of the largest New York hospitals and it is expected that others will join. A nonresident membership is contemplated for the benefit of institutions located outside the city of New York. The movement is attracting much attention, and a large membership should result.

The German Hospital, of Philadelphia, Buys Two Lots.—The German Hospital has purchased the property at the southeast corner of Corinthian Avenue and Cambridge Street, and the adjoining property numbered 913 Corinthian Avenue, lot 40 feet 9 inches by 84 feet 9 inches, for a total consideration of $8,000.

The Philadelphia Neurological Society.—At a meeting of this society, held on Friday evening, November 25th, Dr. B. A. Thomas read a paper in which he stated his belief that the mortality rate from lockjaw could be lowered by the use of antitoxine in the early stages of the disease. Dr. G. E. de Schweinitz read a paper on Tumor of the Pituitary Body with Complete Blindness Lasting Nineteen Days. Dr. S. D. Risley gave a brief talk on bilateral hemianopsia with relation to the pituitary lesion.

A Stated Meeting of the New York Academy of Medicine will be held on Thursday, December 15th, under the auspices of the Section in Obstetrics and Gynæcology. Gonorrhœa in women is the subject chosen for consideration. Dr. Barton Cooke Hirst, of Philadelphia, will read a paper entitled The Clinical Peculiarities of Gonorrhœa in the Child Bearing Woman. Dr. Hermann J. Boldt will read a paper on the Treatment of Gonorrhœa in Women. A discussion will follow, which will be opened by Dr. Alexander B. Cragin.

Diphtheria in Chicago.—There is a great deal of diphtheria in Chicago at present, about eight hundred cases, according to newspaper reports, and the number is increasing steadily. That the situation is considered serious by the health authorities is shown by the fact that at a meeting, held on November 25th, the council on finance, at the request of Health Commissioner Evans and Dr. Leman Spalding, superintendent of the contagious disease department, voted unanimously to give the department an extra $10,000 with which to fight the disease.

The Clinical Surgical Congress of North America closed its first meeting in Chicago on November 19th, after two weeks of study in the big hospitals and medical schools of the city. The congress was so successful that it was decided to organize permanently and hold an annual meeting in one or another of the medical centres of the country, along the lines of the Chicago meeting. More than twelve hundred surgeons from the United States, Canada, and Mexico were in attendance, and clinics were held in all the large hospitals. Dr. Albert J. Ochsner, of Chicago, was appointed president of the new organization.

A Hospital for the Tuberculous Insane.—After a conference with the State Commissioner of Health, on November 22d, the Pennsylvania State Board of Public Charities decided to recommend to the next legislature the erection of a permanent building for the care of insane persons afflicted with tuberculosis. It is not known at present how large an appropriation will be asked for, but as tne building will be permanent, divided into sections for men and women, and fully equipped with all modern conveniences for fighting tuberculosis, it is estimated that the proposed institution will cost approximately $150,000. It is probable that this building will be erected in connection with the State hospital in Harrisburg, because of the central location, unless it be decided that conditions at another asylum are better for the purpose. At the present time none of the State hospitals for the insane has any means for segregating tuberculosis patients.

The Section in Pædiatrics of the New York Academy of Medicine will hold a joint meeting with the Philadelphia Pædiatric Society, in Hosack Hall, New York Academy of Medicine, on Thursday evening, December 8th. The topic selected for discussion at this meeting is meningitis. Dr. L. Emmett Holt will read a paper embodying his observations upon three hundred cases of acute meningitis in infants and young children. Dr. Josephine Hemenway will read a paper dealing with the constant presence of the tubercle bacillus in the cerebrospinal fluid of tuberculous meningitis with other observations upon the cerebrospinal fluid in different forms of meningitis. Dr. Martha Wollstein will present a paper entitled An Experimental Study of Influenza Meningitis. The discussions will be conducted by members of the Philadelphia Pædiatric Society. An executive session will be held, the principal business to be transacted being the election of officers for 1911. At the close of the meeting an informal smoker will be held at the Yale Club.

The Clinical Society of the New York Throat, Nose, and Lung Hospital will hold a stated meeting, at the hospital, on Monday evening, December 5th, at 8:15 o'clock. Dr. C. J. Imperatori will present a report of a case of asthma relieved by intranasal operation. Dr. P. Schoonmaker will demonstrate with the bronchoscope a case of papilloma of the trachea. The report of a case of osteomyelitis of the rib due to typhoid bacillus will be presented by Dr. Irving S. Haynes and Dr. T. A. Gonzales. The paper of the evening, entitled Review of the Recent Work in Typhoid Fever, will be read by Dr. N. B. Potter.

New Jersey Physicians Organize to Fight Counter Prescribing by Druggists.—The physicians in towns in the northern part of Hudson County, N. J., have formed an organization for the purpose of putting a stop to the practice of many druggists of suggesting and selling medicines for all sorts of ailments without a doctor's prescription. So general has this counter prescribing become that the physicians have decided to get after the druggists who persist in violating the State law. Dr. Thomas Byrne, of West Hoboken, is president, and Dr. Frederick J. Quigley, of Union Hill, is secretary of the new association, which has not yet been christened.

Chicago Charity Hospital Consolidated with Wesley Hospital.—Increased operating expenses and a lack of financial support have forced the Chicago Charity Hospital, the only strictly philanthropic private institution of its kind in the city, to consolidate with the Wesley Hospital, which adjoins it on Dearborn Street. The Charity Hospital was established thirty years ago, and in that period it has existed by the generosity of its officers and the public. Contributions have not been sufficient during the last year. The new hospital will be known as the Wesley Hospital, and while an effort will be made to make the institution self supporting, it is proposed to continue the charitable work. It is hoped that eventually a new building will be erected connecting the two hospitals.

The Tri-State Medical Association of Mississippi, Arkansas, and Tennessee held its twenty-seventh annual meeting in Memphis, Tenn., on November 15th, 16th, and 17th, with the president, Dr. J. S. Rawlins, of Dancyville, Tenn., in the chair. About four hundred physicians were in attendance, and an excellent programme was presented. The following officers were elected to serve for the ensuing year: President, Dr. J. W. Barksdale, of Winona, Miss.; vice-president for Mississippi, Dr. John Darrington, of Yazoo City; vice-president for Arkansas, Dr. Robert P. Nall, of Armorel; vice-president for Tennessee, Dr. Arthur G. Hudson, of Rein; secretary, Dr. Eugene Rosamond, of Memphis, reelected; treasurer, Dr. J. A. Vaughan, of Memphis, reelected. Memphis was selected as the place for the meeting in 1911.

The New York Hospital for the Ruptured and Crippled Sold.—The New York Central Railroad has purchased from the New York Society for Ruptured and Crippled the property comprising the block fronting on Lexington Avenue from Forty-second to Forty-third Street, for a consideration of $1,350,000. According to present plans the railroad will not get possession of the hospital block for at least a year, so for that time the hospital will be continued. For more than a year the trustees of the hospital have been discussing plans for the erection of a home for inactive cases somewhere in the country, and it is probable that a twenty-acre tract of land will be selected for that purpose within the ten-cent fare zone. It is also proposed to build a new hospital somewhere in the city.

Endowment for the Hospital for the Relief of Crippled and Deformed Children, Baltimore.—Announcement is made that Mr. James L. Kernan will endow for the Hospital for the Relief of Crippled and Deformed Children the property known as Radnor Park, at Dickeyville, Md. The institution in its new quarters will be known as the James Lawrence Kernan Hospital and Industrial School for Crippled Children. The cost of the property and the expense of making the buildings ready for use as a hospital will be about $100,000. A reception hospital for new cases, emergency cases, and accidents, will be maintained at the present site, 2000 North Charles Street, Baltimore, where the Hospital for the Relief of Crippled and Deformed Children was founded on October 2, 1895, by Dr. R. Tunstall Taylor, with six patients and one nurse.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending November 26, 1910:

	November 19th.		November 26th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	495	155	499	151
Diphtheria and croup	273	18	211	29
Measles	117	1	120	4
Scarlet fever	136	6	160	5
Smallpox	..	..	..	..
Varicella	83	..	94	..
Typhoid fever	135	15	64	5
Whooping cough	22	2	24	7
Cerebrospinal meningitis	2	2	2	4
Total	1,263	199	1,174	205

Vital Statistics of New York.—During the week ending November 19, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,264, corresponding to an annual death rate of 13.74 in a thousand of population, as compared with a rate of 15.87 for the corresponding period in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.28; the Bronx, 14.95; Brooklyn, 13.02; Queens, 11.39; Richmond, 13.86. There were 136 stillbirths. The deaths of children under five years of age numbered 291, of whom 200 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 54; over five years of age, 61. There were 155 deaths from pulmonary tuberculosis, 108 from pneumonia, 61 from bronchopneumonia, 128 from Bright's disease, 125 from organic heart diseases, and 61 from congenital debility and malformations. There were 14 deaths from suicide, 4 from homicide, and 57 due to accidents. Eight hundred and fifty-five marriages and 2,434 births were recorded during the week.

The Health of Chicago.—During the week ending November 19, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 94 cases, 14 deaths; measles, 37 cases, 0 deaths; smallpox, 1 case, 0 deaths; whooping cough, 21 cases, 0 deaths; scarlet fever, 138 cases, 7 deaths; diphtheria, 265 cases, 27 deaths; chickenpox, 56 cases, 0 deaths; tuberculosis, 94 cases, 74 deaths; pneumonia, 35 cases, 118 deaths. There were 2 cases of cerebrospinal fever, 4 of diarrhœal diseases, and 32 of contagious diseases of minor importance reported, making the total 784 as compared with 741 for the preceding week, and 730 for the corresponding week last year. The deaths under two years of age from diarrhœal diseases numbered 34, and there were 40 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 159, of whom 111 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 632, corresponding to an annual death rate of 15.08 in a thousand of population, as compared with a rate of 13.4 for the preceding week and 12.4 for the corresponding period last year.

The Late Dr. Ransom.—At a regular meeting of the West End Medical Society, New York, held October 22, 1910, the following preamble and resolutions were adopted:

This society, having learned of the recent death of our esteemed fellow member, Dr. Charles C. Ransom, desires to place on record a formal expression of our appreciation of the great loss resulting to us, both individually and collectively, from his death.

Connected by membership with this society almost from its inception, honored with the office of president, he maintained a never flagging interest in its welfare and actively labored to promote its best interests. His contributions to the society proceedings were many and always upon a plane of dignified scientific value. A man of culture, of pleasing personality and address, he was held in high personal esteem by all his associate members.

Therefore, Be It Resolved, That in the death of Dr. Ransom the West End Medical Society recognizes with sorrow and profound regret the loss of a most esteemed member; that we beg to extend to his grief stricken family our deep sympathy; that a copy of these resolutions be spread upon the minutes and that the secretary be instructed to furnish a copy to the medical press for publication.

Signed:
W. B. Pritchard, M.D.,
E. J. Ware, M.D., A. H. Travis, M.D.

Itinerant Vendors of Medicine in Illinois Punished.—The Supreme Court of the State of Illinois has recently rendered a decision reversing the judgment of the trial court in the case of the State Board of Health *versus* J. A. Wilson, an itinerant vendor of medicine, who had set up the defense that the medical practice act prohibiting the sale of nostrums by itinerant vendors is unconstitutional; that it had been superseded by the pharmacy act, and that finally the actual salesman was not the vendor in the meaning of the act, but that the suit had been brought against the proprietors of the nostrum who employed him. The Supreme Court held that the pharmacy act in no wise repeals any of the provisions of the medical practice act, that the act is constitutional, and that the pamphlet wrapped around the bottles containing laudatory statements concerning the efficacy of the preparation brought the act of the salesman in selling it under the provisions of the law which prohibits any itinerant vendor from professing to the public by writing or printing, or any other method, to cure or treat disease or deformity. Acting under this decision the board of health has called upon the State attorneys throughout the State to institute proceedings against all itinerant vendors of medicine who are found to be acting in contravention of the law.

Society Meetings for the Coming Week:

Monday, *December 5th.*—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Hornell, N. Y., Medical Society.

Tuesday, *December 6th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Associaton of Troy and Vicinity, N. Y.; Long Island, N. Y., Medical Society (annual); Bridgeport, Conn., Medical Association.

Wednesday, *December 7th.*—Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

Thursday, *December 8th.*—New York Academy of Medicine (Section in Pædiatrics); Brooklyn Pathological Society; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.

Friday, *December 9th.*—New York Academy of Medicine (Section in Otology); New York Society of Dermatology and Genitourinary Surgery; Eastern Medical Society of the City of New York (annual); Saratoga Springs, N. Y., Medical Society.

Saturday, *December 10th.*—Therapeutic Club, New York.

The Southern Medical Association.—The fourth annual meeting of this association was held in Nashville, Tenn., on November 8th, 9th, and 10th, under the presidency of Dr. W. W. Crawford, of Hattiesburg, Miss. The address of welcome was delivered by Dr. W. H. Haggard, of Nashville, and was responded to by Dr. Seale Harris, of Mobile, Ala. The scientific work was divided into three sections, and many interesting and valuable papers were presented and discussed. Dr. A. B. Cooke, of Nashville, presented resolutions, which were adopted, endorsing the medical inspection of all school children. The *Gulf States Journal of Medicine and Surgery* was made the official organ of the association. The association by resolution urged upon Congress the necessity of creating a National Department for the protection of the present and future generations and the strict interpretation of the pure food and drugs act, whereby the public can be shielded from foods drugged with artificial preservatives, from habit forming drugs, and from dishonest labels. The following officers were elected for the ensuing year: President, Dr. Isadore Dyer, of New Orleans; vice-president for Tennessee, Dr. William Litterer, of Nashville; vice-president for Florida, Dr. W. W. Adamson, of Tampa; vice-president for Georgia, Dr. William C. Lyle, of Augusta; vice-president for Alabama, Dr. T. D. Park, of Birmingham; vice-president for Louisiana, Dr. J. B. Guthrie, of New Orleans; vice-president for Mississippi, Dr. A. G. Payne, of Greenville; secretary-treasurer, Dr. Seale Harrie, of Mobile, Ala. Hattiesburg, Miss., was selected as the place for holding the next meeting.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

November 24, 1910.

1. Remarks on the Technique of Operations for Stone in the Ureter, By Hugh Cabot.
2. A Method for Staining Capsulated Bacteria in Body Fluids, By William H. Smith.
3. Cancer of the Scrotum (*Concluded*), By Robert M. Green.
4. The Technique of Arthrotomy. A Report upon and Discussion of 198 Cases, By Charles F. Painter and Andrew P. Cornwall.

2. **Method of Staining Capsulated Bacteria in Body Fluids.**—Smith describes his method of staining capsulated bacteria in body fluids as follows: Make a thin smear from fresh sputum, lung, pleural, or pericardial exudate. Pass through flame. Cover with ten per cent. aqueous solution of phosphomolybdic acid four to five seconds. Wash in water. If the microorganism is Gram staining, like the pneumococcus or *Streptococcus mucosus capsulatus*, stain with aniline oil gential violet, steaming from one quarter to one half minute. Wash in water. Treat with Gram's solution of iodine, steam from one quarter to one half minute. Decolorize with ninety-five per cent. alcohol. Wash in water. Stain with six per cent. aqueous solution of eosin, from one half to one minute, warming gently. Wash in water. Wash in absolute alcohol. Clear in xylol and mount in Canada balsam. The capsule will be found to be distinct, clear cut, eosin stained, about the Gram stained microorganism. If the microorganism is Gram decolorizing, after covering the smear with phosphomolybdic acid and washing, stain with six per cent. aqueous solution of eosin, from one half to one minute, warming gently. Wash in water. Counter stain with Loeffler's methylene blue, from one quarter to one half minute, warming gently. Wash in absolute alcohol. Clear in xylol and mount in Canada balsam. The capsule will appear eosin stained about the blue stained microorganism.

3. **Cancer of the Scrotum.**—Green speaks of the "chimneysweeps' cancer," which is now regarded merely as a form of epithelioma, to which the irritating qualities of soot and the uncleanly habits of chimneysweeps afforded predisposing local conditions. With increase of popular habits of cleanliness and the extensive employment of mechanical devices for sweeping chimneys, the disease has practically disappeared. Only sporadic cases now occur, usually without determinable cause of local irritation. The history of the disease, however, presents a curious and interesting chapter of medical literature. Green has collected, abstracted, and arranged chronologically, a series of illustrative cases that have been reported for the most part by English authors. In instances in which the original article was not accessible for verification, he has merely quoted the reference without comment. The first one he cites is reported by Bassius, 1731, in *Observationes anatomicae*. To this list he adds the history of four cases treated in the Massachusetts General Hospital.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 26, 1910.

1. Oesophageal Stenosis Following the Swallowing of Caustic Alkalies, By Chevalier Jackson.
2. Changes in the Nose after Widening the Palatal Arch, By L. W. Dean.
3. An Apparatus for Supporting and Holding the Head and Shoulders in Cerebellar and High Spinal Operations, By Homer B. Smith.
4. Enteroptosis, with Special Reference to Its Aetiology and Development, Richard R. Smith.
5. Surgical Aspects of Enteroptosis, By A. J. Ochsner.
6. Enteroptosis, the Physician's Viewpoint, By J. H. Musser.
7. The X Ray Diagnosis of Enteroptosis, By Edward Holman Skinner.
8. Arthritis of Gastrointestinal Origin, Its Diagnosis and Treatment, By H. W. Marshall.
9. Radical Cure of Malaria; Its Importance and how It Is Obtained, By Seale Harris.
10. Accurate Formula for Use in the Modification of Cows' Milk in the Artificial Feeding of Infants, By George Reily Moffitt
11. Dietary Studies of Undernourished School Children in New York City, By E. Mather Sill.
12. Miners' Consumption, By Otto V. Huffman.
13. Fatal Gunshot Wound, By A. F. Johnson.
14. Axis Traction Handle for Obstetric Forceps, By W. P. Megrail.
15. Warning against the India Ink Method for the Spirochæta Pallida, By Joseph H. Barach.

1. **Caustic Alkalies and their Danger.**—Jackson reports four cases of œsophageal stenosis in children following the swallowing of caustic alkalies. He says that the law requires that the druggist shall label corrosive poisons "poison," and the careful druggist adds antidotal advice. Next door to the druggist the grocer sells corrosive poisons having on the label not only no hint of caution, but having directly misleading statements, such as "will not injure the hands," "will not harm the most delicate fabric," etc. He concludes that the law should also compel manufacturers to label the corrosives "poison," which are infinitely more dangerous because they go into the kitchen and not the medicine closet.

4, 5, 6, 7. **Enteroptosis.**—Smith speaks of the ætiology of enteroptosis, hereditary and acquired, and says that lack of nutrition and flabbiness of tissues may be said to be the chief underlying mechanical causes of visceral displacement. Later in life child bearing becomes a factor to be recognized, since it strains the already weak anterior abdominal wall and tends to increase the general laxness of the tissues. The woman, however vigorous and well developed during childhood and girlhood, may, through hard work, child bearing, or other untoward influences, bring about a laxness of tissues and bulging of her abdominal walls; and in such a woman it is not infrequent to find a palpable kidney and other organs downwardly displaced. It must be emphasized, however, that the degree of prolapse of the abdominal viscera in these cases is of much less degree than that found in true enteroptosis. It is common, however, to see the conditions mixed.—Ochsner treats the surgical aspects of enteroptosis.—Musser represents the physician's viewpoint, the proper hygienic treatment, abdominal support, and indirect therapeutics.—Skinner observes that having rendered the lumen of the colon opaque, it is possible to record exactly, either by fluoroscope or radiograph, the position of the colon in its relation to the umbilicus and bony skeleton. The fluoroscope will give diagnostic information beyond the radiograph, in that changes in position of the colon, due to manipulations and adhesions, may be studied.

11. **Diet of School Children.**—Sill remarks that the problem of nourishment which is so vital to the poor and the children of the poor, and the condition of our future population and nation at large so dependent on the way her children are nourished, that it should receive the attention of all. We find by our studies that many poor families spend more than they can afford for food and yet receive insufficient nourishment by reason of their ignorance of food values. Fewer eggs and less butter can be used and the cheaper cuts of meat purchased and the difference thus saved can be expended for corn meal, wheat flour, cereals in bulk, rice, oatmeal, dried beans, potatoes, dried peas, lentils, whole milk, and skimmed milk. Where the income of the family is very small meat can be replaced to a large extent by these vegetables and cereals, which are much cheaper for their nutritive value. A large variety of fresh vegetables is not necessary or essential; they contain very little protein or energy, and where cost is considered one or two cheaper vegetables are sufficient. The cheaper cuts of beef contain more protein and fat and less waste than the more expensive cuts, and these with wheat flour, bread, oatmeal, peas, and beans furnish abundant protein very cheaply. The cheaper cuts of pork, flour, bread, sugar, cornmeal, potatoes, and rice furnish abundant fuel and energy in a cheap form. It has been found that the cheapest source of protein is the cereals; next comes meat; the most expensive being fresh vegetables. The diet, as is well known, should vary somewhat with the climate and season of the year, and proper cooking of food is most important, making it more appetizing, more digestible, and more nourishing. In the majority of families among the poorer classes the food is poorly chosen, poorly cooked, and poorly served, and in not a few families there is considerable waste, especially among those who are fairly well to do. A carefully selected diet is necessary to keep the balance so that there may be as nearly as possible the right amount of fat, protein, or carbohydrates. Extremes of diet should be avoided, and a mixed balanced diet of protein, carbohydrates, and fat maintained. Emphasis should be laid on the necessity of setting a clean attractive table, having the meals eaten at regular hours, the whole family sitting down at the table together when the meal is warm.

MEDICAL RECORD.

November 26, 1910.

1. The United States Naval Medical School, By HENRY G. BEYER.
2. The Philosophical Anatomy of the Liver, By EDMOND SOUCHON.
3. Chemical Problems in Diabetes, By ADOLF MAGNUS-LEVY.
4. Tuberculin Treatment in Advanced Stages of Tuberculosis: A Report of Seventeen Cases Treated with Tuberculin Serum in Hospital Practice, By FREDERICK A. DEAL.

1. **United States Naval Medical School.**—Beyer, as president of the United States Naval School, delivered the address at the opening of the school. He speaks of the function of the school, of the biological branch, the professional and military education, and the laws, regulations, and orders.

4. **Tuberculin Treatment in Advanced Stages of Tuberculosis.**—Deal speaks of tuberculinum purum, which has been prepared by Gabrilowitch, of Halila, Finland, who stated that Koch's old tuberculin contained not only the beneficial principle which had the specific properties, but also certain albumose constituents which had no therapeutic value and which were the cause of the untoward reactions. He worked with a preparation of Koch's "old" tuberculin from which these toxic constituents had been eliminated by means of chemical reagents (alcohol, chloroform, xylol), and found that this purified tuberculin no longer produced general toxic reactions. According to Gabrilowitch, this tuberculinum purum (T. P.) can be used in rapidly increasing doses, is not contraindicated in cases in which organs other than the lungs are involved, and produces no subjective or objective discomfort to the patients. Gabrilowitch reported that the remedy gave him very satisfactory results, reducing fever, increasing weight, improving the local lesions, and lessening the number of tubercle bacilli in the sputum. Deal has tried this tuberculinum purum. He reports seventeen cases. No untoward effect was produced by tuberculinum purum, excepting occasionally a transient feeling of constriction in the chest. The temperature was not raised by the injections, save in some instances to the extent of a few tenths of a degree. This is in marked contrast to the severe reactions common with Koch's old tuberculin—fever, chills, dyspnœa, prostration—whose occurrence means so sharp a setback to the patients. In all but one of the acute miliary cases a specific effect on fever, lesions, bacteria in the sputum, expectoration, appetite, digestion, weight, general condition was evident. A distinct arrestive influence on the tuberculous process must be conceded. These favorable effects were particularly striking on comparison of these cases with those which received only the regular treatment without tuberculin in the hospital. The results in tuberculous arthritis suggest the desirability of further trials of the product in surgical tuberculosis. He concludes that the purified tuberculin, properly used, causes no reaction of any significance in advanced cases of tuberculosis, so that it may be safely used in stages in which tuberculin has heretofore been deemed contraindicated. The benefits which often follow the treatment with the purified tuberculin—reduction of fever, of the catarrhal symptoms, of the infiltrates, and of the subjective difficulties—certainly encourage its further use in combating the process and ameliorating the condition even in advanced stages of tuberculosis.

BRITISH MEDICAL JOURNAL.

November 12, 1910.

1. Greek Medicine in Rome, By Sir T. CLIFFORD ALLBUTT.
2. Four Cases of Pneumonic Plague, By H. P. SLEIGH.
3. The Recent Plague Cases in Suffolk, By HERBERT H. BROWN.
4. Radium Therapy in Eye Disease, By ARNOLD LAWSON and J. MACKENZIE DAVIDSON.
5. Serum Anaphylaxis: A Case Illustrating Its Possible Gravity, By A. BANKIER SLOAN.

SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Section in Bacteriology.

6. Discussion on Recently Acquired Knowledge Concerning the Bionomics of Pathogenic Organisms and Its Bearing on the Spread of Disease, Introduced by A. C. HOUSTON.
7. Dysentery Carriers, By G. H. K. MACALLISTER.
8. Diphtheria Carriers, By JOSEPH A. ARKWRIGHT.
9. On the Interpretation of the Precipitin Reaction, By D. A. WALSH and H. G. CHAPMAN.
10. Studies in the Anaerobic Culture of the Intestinal Microorganisms, By W. J. PENFOLD.
11. An Outbreak of Gastroenteritis Due to *B. paratyphoid* (B), By F. A. BAINBRIDGE.
12. Recognition of *Bacillus typhosus* by Complement Fixation, By H. R. DEAN.
13. The Serum Treatment of Dysentery; with Notes on the Bacteriological Diagnosis of Dysentery, By M. A. RUFFER and J. GRAHAM WILLMORE.

2. **Pneumonic Plague.**—Sleigh reports four cases of pneumonic plague occurring near Ipswich, England. Investigation as to the cause of the outbreak elicited the fact that a great many rats were dying in the neighborhood, and on bacteriological investigation many of these, as well as a hare and a cat, were found to have plague. On further investigation it was elicited that five years previously eight persons were similarly attacked near Ipswich. Of those eight persons attacked six died, and there is no doubt that they also were plague cases. These cases occurred about a quarter of a mile from the river Orwell, and at a point exactly opposite to where the larger ships anchor to lighten their cargoes into barges to enable them to proceed up the river to Ipswich. It would be an easy matter for rats to swim ashore from those boats at this point, and it is surely not mere coincidence that rats on the other bank of the river at this point have since been proved bacteriologically to have plague. There certainly has been an undue mortality among rats since the occurrence of those eight cases, and it would almost appear as if there has been a chronic condition of plague among rats in the district since that time. There are, however, other possible sources of infection which are under investigation; the results, when complete, will no doubt be made known. It is now known that other districts in Suffolk have a "rat plague," the cause of which is being investigated alongside with this district. To prevent the spread of infection stringent measures were adopted. All contacts were quarantined for a period of ten days; in both houses all articles that could not be thoroughly disinfected were buried, the rooms were carefully disinfected, their walls were stripped, and afterward repapered. The destruction and disposal of rats over a wide area was carried out.

4. **Radium Therapy in the Eye.**—Lawson and Davidson report forty-six eye cases treated with radium. They say that the method of applying the radium was crude but satisfactory. The eye was first cocainized and the radium, which was contained in sealed glass tubes permitting only the passage of beta and gamma rays, was applied directly to the affected part. The fingers of the operator were protected by enveloping first that part of the tube not required and then the fingers in a thick, continuous wrapping of lead foil. The process is tedious, especially as care must be exercised to keep the tube in close contact with the part desired to treat which is often very small, but no more efficient way could be devised. In no single instance have they observed the slightest ill effects from the use of radium. They have exercised caution, especially when dealing with the eye itself, and it is probable that when the actions and dangers of radium are more fully understood there will be a much greater freedom in repeating the sittings than they thought advisable. No increase of inflammation or aggravation of symptoms occurred in any case, with the one exception of pain, and which, when it occurred, was usually transient and not severe. It is at the present time unfortunately impossible to give more than a few general indications, and to point out by results obtained the most likely road to a successful issue. With regard to the eye itself, they had no basis upon which to found their observations, so they thought the best plan would be to fix a time limit which would not endanger the integrity of the eye, however large a dose it might be considered desirable to try. Mr. Mackenzie Davidson's experience with radium here proved the deciding factor, and an exposure of five minutes was fixed as being absolutely safe. With regard to the more remote effects of applying radium to the eye, they say that in not a single instance did they obtain any untoward inflammatory exacerbation as the result of treatment. A certain number of patients did not respond at all to the radium, but in those that did so the effect produced was simply that improvement became manifest, rapid, or slow as the case might be, without any characteristic clinical signs. A noticeable result of treatment by radium is the character of the scars produced, which are best exemplified in cases of spring catarrh. They are perfectly supple and smooth, and do not exhibit the slightest tendency to cause cicatricial dragging; but they are very strikingly bloodless, and the tarsal surface of the lid after the cure of a case of spring catarrh presents a very blanched appearance.

November 19, 1910.

1. An Address on Some Points Concerning Tubercle, Syphilis, and Malignant Disease, By RUTHERFORD MORISON.
2. The Röntgen Ray Appearances of Thoracic Aneurysm, By A. C. JORDAN.
3. Miner's Nystagmus, By H. S. ELWORTHY.
4. On the Cause of Neuropathic States, By GEORGE RUTHERFORD JEFFREY.

SEVENTY-EIGHTH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Section in Pharmacology and Therapeutics.

5. Discussion on Lactic Acid Therapy, Introduced by OTTO GRÜNBAUM.
6. New Facts Concerning Chrysarobin, By Professor P. G. UNNA.
7. The Action of Lime Salts, By Professor HANS MEYER.
8. The Treatment of Morphinomania by the "Combined" Method, By H. CRICHTON MILLER.
9. Comparative Therapeutic Value of the Organic and Inorganic Compounds of Certain Elementary Bodies, By J. M. FORTESCUE-BRICKDALE.
10. The Action of Hydrastinine and Cotarnine, By P. P. LAIDLAW.
11. Discussion on the Effects of Digitalis on the Human Heart, Introduced by Professor K. F. WENCKEBACH.
12. The Active Principles of Ergot, By H. H. DALE.
13. Treatment of Lobar Pneumonia, By A. J. MATHISON.

Section in Laryngology.

14. Discussion on Direct Methods of Examining the Air and Food Passages,
Introduced by CARL VON EICKEN
15. Discussion on the Removal of the Tonsils,
Introduced by G. SECCOMBE HETT.

3. **Miner's Nystagmus.**—Elworthy says that the one essential factor of miner's nystagmus seems to be exhaustion of the eyes from working in the general blackness without any color relief. The first thing to do is to remove the cause; that is, stop work underground. Let the patient rest, and in subdued light if he has photophobia. We have to deal with a state of exhaustion and increased nervous irritability. Therefore at first medical treatment should be sedative; such as the bromides or hyoscyamus. Later, these should be replaced by stimulant tonics and brighter light as the patient can tolerate it. To commence with stimulants seems to the author like whipping up a tired horse instead of resting it. Eye shades, blue or smoked goggles, give a good deal of relief in some cases, especially in sunlight and snow, but fail in others. He thinks that green colors would do good. Proper glasses should be prescribed to correct errors of refraction. Whether it would be profitable to provide green or other colored rooms in hospitals and apply other special forms of treatment is uncertain.

5. **Lactic Acid in Therapeutics.**—Grünbaum, in opening the discussion on this subject, said that some seem to hold the view that lactic acid forming bacilli of the same group as *Bacillus bulgaricus* were able to destroy putrefactive bacilli in the same way as phagocytes could deal with bacteria. This was not the case. Their action came from their power of manufacturing lactic acid; the presence of this acid was inimical to the multiplication of putrefactive microorganisms. Evidence in support of this statement was to be found in the work of Metchnikoff, of Hayem, Singer, and others. Many would ask: How, then, did the administration of the lactic acid bacillus compare with the exhibition of antiseptics, or lactic acid by the mouth? To his mind the great advantage of the lactic acid bacillus was that it formed lactic acid where it was of value; if an antiseptic was given by the mouth it was absorbed in the stomach or small intestine, and did not reach the large intestine, the main site of the multiplication of putrefactive microorganisms. Grünbaum was not in favor of tablets said to contain living bacilli, as this was very problematic. He had lately always ordered milk in which there were millions of bacilli per cubic centimetre. There were a number of preparations upon the market which contained a very large number of *Bacillus bulgaricus*, and comparatively few cocci; preparations of this kind had a distinctly sharp although pleasant taste. If we agreed that the beneficial action was due to the antiseptic properties of the lactic acid formed in the intestine, it was obvious that it did not matter whether the acid was formed by the *Bacillus bulgaricus* or by a streptococcus. There were, however, two advantages in choosing milk containing the *Bacillus bulgaricus:* (a) Microscopical examination permitted us to judge whether there was much contamination. If there were many streptococci present it was difficult to say whether these had been introduced on purpose or whether they were an accidental contamination. (b) The *Bacillus bulgaricus* was a more active lactic acid producer than most of the lactic acid forming streptococci. It was, however, asserted that the preparations with the pure *Bacillus bulgaricus* were less palatable than those containing other bacilli. A special diet should be given during the first few days of the treatment. This treatment consisted of much carbohydrate and a fair quantity of malt extract; proteid food and fats were limited. Since carbon dioxide was evolved in converting the carbohydrate into lactic acid, it was wise to warn the patient that it was not unlikely that flatulence would be increased temporarily. After the bacillus was established a physiological diet might be prescribed with advantage. As to the quantity and frequency of administration, the author said that it was a mistake to think that the more acid the milk the greater number the bacilli. Lactic acid forming bacilli, like many others, tended to be killed by their metabolites. The preparation of milk should be curdled, for without this it was necessary to prove the presence of bacilli; but it should be only just curdled, for in this stage it contained many young and vigorous bacilli, and did not possess an acidity which was objectionable to the average palate. The course of treatment should be begun with a third of a pint of curdled milk taken thrice daily, but after the third or fifth days this might be reduced to a quarter of a pint twice a day. As to the kind of cases which were likely to benefit by the treatment, these might be divided into three classes: (a) Conditions in which the microorganism which caused irritation of the intestinal mucosa did not flourish in a lactic acid medium. (b) Cases in which the toxines produced by the putrefactive microorganisms in the intestine were too readily absorbed or eliminated with too much difficulty. (c) Certain cases of *malade imaginaire.*

6. **Chrysarobin.**—Unna states that chrysarobin is still the specific in psoriasis. He says that a generous use of chrysarobin siccatifs and of ointments containing, besides chrysarobin, oleates of lead, are to be recommended as an especially quick and thorough treatment of psoriasis.

LANCET

November 12, 1910.

1. Greek Medicine in Rome, By Sir T. CLIFFORD ALLBUTT.
2. A Case of Multiple Myeloma, with Some Observations on the Nature of the "Bence Jones" Protein Found in the Urine,
By OWEN T. WILLIAMS, E. R. EVANS, and ERNEST GLYNN.
3. A Radical Operation for Malignant Disease of the Testis, By RUSSELL HOWARD.
4. The Treatment of Pulmonary Tuberculosis by Intravenous Injections of Chinosol with Formaldehyde,
By JOHN MCELROY.
5. Notes on the Operative Treatment of Papilloma of the Bladder, By J. W. THOMSON WALKER.
6. On Chronic Bronchitis and Emphysema as the Result of Acute Pneumonia, By SAMUEL WEST.
7. Aortic Regurgitation, By WALTER BROADBENT.

4. **Chinosol and Formaldehyde in the Treatment of Pulmonary Tuberculosis.**—McElroy reports three cases of pulmonary tuberculosis treated with chinosol and formaldehyde. He administered thirty-three injections altogether on thirty-three consecutive days, the strength being increased to

1 in 500 in the case of the formaldehyde and to 1 in 1,000 in the case of the chinosol. Many cases will require more injections, but he does not consider it advisable to increase the strength of the formaldehyde above 1 in 500, the strength of the solution being increased above that figure by increasing the chinosol from 1 in 1,000 to 1 in 500. Beyond slight gastric disturbance the patient suffered no inconvenience. The method of administering injections was as follows, Dr. Maguire's apparatus being used: Fifty cubic centimetres of a 1 in 2,000 solution of formaldehyde plus 1 in 4,000 solution of chinosol were injected into the median basilic or median cephalic vein—the usual precautions being taken—and this was repeated daily, the strength being gradually increased. The author concludes: Has the chinosol in conjunction with the formaldehyde, when injected intravenously, any destructive effect upon the tubercle bacillus itself; or, on the other hand, does it assist Nature's efforts and cause a reactive inflammation around the tuberculous area, and so encapsulate the caseous mass, and by so doing not only isolate and bring about the natural cure of the diseased area, but prevent the admission of the ordinary bacteria of suppuration which are an additional danger to the natural process of healing? If quinine has a specific action on the malarial fevers, is it not possible that in the case of chinosol, injected intravenously, it may have a selective, destructive action upon the tubercle bacillus itself? Sanatorium treatment is undoubtedly of great assistance in retarding the progress of the disease, but he has not seen a case with pronounced chest symptoms and a sputum rich in tubercle bacilli that sanatorium treatment alone has so definitely or so quickly arrested. What is the good of a treatment if the patient—even if a good deal improved—is allowed to expectorate promiscuously a sputum containing tubercle bacilli? This is where the real danger lies. Until we have more stringent laws relative to the proper preventive measures to be adopted against infection, sanatorium treatment alone will not be of as much service to the community as it might.

7. **Aortic Regurgitation.**—Broadbent remarks that dilatation and hypertrophy of the heart are carried to a greater extent in aortic regurgitation than in any valvular disease. Heaving pulsation of the lower chest is very evident until the heart is failing seriously. Often there is systolic retraction of the intercostal spaces near the sternum, due to atmospheric pressure and not to adherent pericardium. Also systolic retraction of the lower ribs at the back on the left, and even the right, may be caused by the hypertrophied heart pulling on the diaphragm, which is attached to these ribs. Far the most important time for treatment is at the onset in rheumatic cases. Children with growing pains or a pain in any joint should always have their hearts examined; the onset of endocarditis is so insidious. During the acute stage salicin or aspirin given in full doses appears to be less depressing to the heart than salicylates. Small repeated blisters to the first, second, or third spaces on the left side, are distinctly useful as also is potassium iodide after the temperature has fallen. When the aortic valve is affected, rest in bed is essential, not only until the temperature comes down to normal, but for at least six weeks after, and then a very gradual return to being up all day, and no exercise or work should be allowed for six months or more. If so treated the murmur and all signs of the regurgitation will in rare instances completely disappear. But when the regurgitation persists, as it usually does, compensation is attained with as little dilatation as possible, and so more reserve is left for future contingencies. In syphilitic cases potassium iodide tends to prevent the increase of the lesion, and also does good by lowering the vascular tension. Atheromatous cases need tonics combined with measures to reduce the peripheral resistance. In all cases tonics such as strychnine, arsenic, formates, ammonia are most useful, and belladonna if there is palpitation. The bowels should be kept regular, but no violent purgatives must be given because of the danger of fatal syncope. Flatulent distention of the stomach should be watched for and treated, since it may bring on angina pectoris earlier than need be. Whenever there are symptoms of cardiac distress, rest in bed for two weeks or a month should be ordered, and the getting up after this must be gradual. The patient ought also to be warned of the extreme danger of any sudden exertion. Hypodermic injection of morphine is the best hypnotic if the nights are bad. If venous congestion or dropsy come on, digitalis combined with vascular dilators and diuretics is useful until these symptoms have been got rid of. Then, if the mitral and tricuspid breakdown was due to the amount of the aortic regurgitation, the digitalis must be at once stopped, since it is a dangerous drug to use in aortic regurgitation. Bleeding is never safe, but a few leeches may sometimes help the digitalis when there is venous congestion. For angina pectoris the vascular dilators, spiritus ætheris nitrosi, trinitrin, or erythrol tetranitrate are needed regularly, and capsules of amyl nitrite should be carried in case of an attack coming on. Arsenic or phosphorus and tonics improve the condition of the heart muscle and lessen the tendency to attacks.

November 19, 1910.

1. Prospect before the Medical Student of To-day, By JAMES ALEXANDER LINDSAY.
2. Hereditary Craniocleidodysostosis, with a Review of all the Published Cases of this Disease: Theories of the Development of the Clavicle Suggested by this Condition, By DUNCAN C. L. FITZWILLIAMS.
3. Twenty Cases of Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation, By DAVID B. LEES.
4. On Fractures in the Neighborhood of Joints, By ROBERT JONES.
5. On the Use of Potassium Bichromate in the Treatment of Phthisis, By JAMES B. TOMBLESON.
6. Two Cases of Compound Fracture, with Tetanic Symptoms; Recovery after Injection of Antitetanic Serum, By E. K. WILLIAMS.
7. Osteomyelitis of the Left Clavicle, By ANGUS MACDONALD.
8. A Case of Uterus Bicornis Unicollis, By JAMES L. MASTERMAN-WOOD.

3. **Continuous Antiseptic Inhalation in Tuberculosis.**—Lees refers to a former paper which was reviewed in our *Journal* of January 8, 1910, p. 90, and to which we refer our readers. The author adds the history of twenty new patients, and reports on his first thirty patients.

5. **Potassium Bichromate in the Treatment of Phthisis.**—Tombleson gives potassium bichromate in doses of ¼ gr. (2½ minims of a ten per cent. solution in water) either alone or in a tonic mixture (phosphate, hypophosphite, or simple iron), such dose to be taken in a wine glass of water after food, at first twice and later three times a day. The first dose and possibly the second may cause vomiting, but this does not matter, as, in his experience, toleration is easily established without missing a dose. The color of some of the mixtures changes from yellow to green, but this seems in no way to impair the efficacy of the mixture. Six patients received this treatment. Four did not know that they were under any special treatment; and no other medicine than the mixtures mentioned had been used at any time during the treatment in any of the cases. Improvement had been noticeable after the expiration of the first fortnight of treatment.

PRESSE MÉDICALE.

October 1, 1910.

The Ancient and Modern Humoral Theory, By CHARLES RICHET.

October 5, 1910.

Endovesical Separation of the Urine and Catheterization of the Ureters, By GEORGES LUYS.

October 8, 1910.

Indications for and Technique of Transscrotal Orchidorrhaphy in Children, By OMBRÉDANNE.

Indications for and Technique of Orchidorrhaphy in Children.—Ombrédanne favors early orchidorrhaphy; he describes his technique, which does not bring anything new, in a fully illustrated article; he has been successful in twenty-one cases of unilateral and four of bilateral undescended testicle.

October 12, 1910.

1. Anæmia and Hæmolytic Jaundice in Tuberculosis, By L. LANDORZY.
2. X Ray Treatment of Veneral Vegetations, By CHICOTOT.

2. **X Ray Treatment of Venereal Vegetations.**—Chicotot reports thirteen gonorrhœal cases treated successfully with x rays in from three to six séances, each lasting from five to ten hours.

October 15, 1910.

Tuberculous Nephritis with Œdema. By LEON BERNARD.

October 19, 1910.

1. Radiotheropeutics in Acute Adenitis, By F. JANGEAS.
2. Ehrlich's "606," By J. D.

2. **Dioxydiamidoarsenobenzol.**—J. D. remarks that "606" has been found of great value in syphilis, has proved to be a specific like mercury and potassium iodide, but has, like these two standard remedies, its indications and contraindications.

October 22, 1910.

1. Eosinophiles in the Sputum of the Asthmatic. Diagnostic Value and Pathogenic Signification, By FERNAND BEZANSON and S. I. DE JONG.
2. Physiological Bases of Medical Electricity. Electricity and Muscular Atrophy, By A. ZIMMERN and PAUL COTTENOT.

October 26, 1910.

The Lungs in Heart Disease of Children. By HUTINEL.

October 29, 1910.

Metastasis in the Dorsolumbar Vertebræ of Latent Cancer of the Thyreoid, By A. MIGNON and BELLOT.

SEMAINE MÉDICALE

October 5, 1910.

What is the Nosological Significance of Incomplete Forms of Basedow's Disease? By FELIX ROSE.

October 19, 1910.

Practical Results of the Examination of the Heart by the Method of Orsi-Grocco, By C. FRUGONI.

October 26, 1910.

Abortion, By R. DE BOVIS.

BERLINER KLINISCHE WOCHENSCHRIFT

October 31, 1910.

1. Fiftieth Anniversary of the Berliner Medizinische Gesellschaft, By HERMANN SENATOR.
2. Diagnosis of Nasal Diphtheria in the Newborn and Infants, By BLOCHMANN.
3. A New Procedure for the Demonstration of Free Acid in the Stomach, By E. FULD.
4. Acute Myeloid Leuchæmia. A Case of Green Discoloration of the Bone Marrow, By S. M. ZYPKIN.
5. Iodine Cachexia in Arteriosclerosis, By MAX EMMERICH.
6. The "Glandulæ Retrojugulares" in the Early Diagnosis of Experimental Tuberculosis in Guineapigs, By GEZA KIRALYFI.
7. Simple Measuring Scales for the Normal Size of the Heart in X Ray Pictures, By MAX LEVY-DORN.
8. Von Dungern's Modification of Wassermann's Reaction, By RICHARD FRÜHWALD and FELIX WEILER.
9. A Simple Method of Anæsthesia through the Veins, By ARTHUR SCHLESINGER.
10. Some Debated Points in the Biology of the Tubercle Bacillus, By HANS ARONSON.
11. X Ray Transillumination without a Screen, By ALBERT BAUER.

2. **Nasal Diphtheria in Infants.**—Blochmann urges the early examination of the nose in infants who are sick, because at that age diphtheria is accustomed to run its course as a nasal diphtheria. Direct examination of the nose may reveal the diagnosis clinically without the delay incident upon a bacteriological examination, but the latter should also be made. Several cases are mentioned in which the true diagnosis was obtained at an early period in this way.

6. **Experimental Tuberculosis.**—Kiralyfi asserts that the enlargement, caseation, and content with tubercle bacilli of the glands, called by him retrojugular, which lie symmetrically on the right and left side of the incisura jugularis sterni furnish the easiest, surest, and for practical purposes the earliest recognizable symptom of tuberculosis in guineapigs. The changes can be recognized in from eight to fourteen days after the infection.

GLASGOW MEDICAL JOURNAL

November, 1910.

1. Joint Communication on Syphilis: Recent Methods of Diagnosis and Treatment—The Wassermann Serum Reaction and Ehrlich's "No. 606," By ROBERT MUIR, CARL H. BROWNING, and IVY M'KENZIE.
2. Three Modern Poisons, By FRIEDERICH KANNGIESSER.
3. An Experience in Treatment of the Insane without the Use of Sedatives, By H. FERGUSON WATSON.

1. **Syphilis.**—Muir and Browning speak of the Wassermann reaction in syphilis. They say that the reaction may be positive at a time when there are no obvious manifestations. This might be due to lesions localised in the internal organs; but such is probably the case in only a proportion of instances, as the virus is known to remain alive in monkeys for long periods without producing obvious changes in any tissues. At the same time it is

clear that the spirochætæ may well exert their pathogenic effects in perverting the tissue metabolism in such a way as later on to lead to premature senescence, without any localised histological lesion being observable at the time of examination. It is probably most reasonable to regard a positively reacting serum as the most delicate sign of pathogenic action on the part of the spirochætæ, and its presence is an indication that gross effects are liable to occur at any time. Accordingly, a positive reaction would indicate the continuance of treatment. Conversely, a negative reaction, which means the restoration of the serum to its normal state, signifies, if not complete destruction of the parasites, at least the establishment of a condition of equilibrium between the host and the spirochætæ, so that the latter assume the character of harmless saprophytes. If any treatment short of complete sterilisation is to be of value it must maintain this relationship; hence the Wassermann reaction should be used to control the treatment, as it is the most subtle indicator of a disturbance of equilibrium with the assumption of pathogenic activity on the part of the spirochætæ. The rational procedure would be to carry on treatment as energetic as possible compatible with the maintenance of general health for a prolonged period after the disappearance of all symptoms, including the positive Wassermann reaction, and then to make at intervals repeated tests, taking a reappearance of a positive reaction as an indication for the immediate resumption of treatment.

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Proceedings of Societies.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS.

Twenty-third Annual Meeting, held in Syracuse, N. Y., September 20, 21, and 22, 1910.

The President, Dr. Aaron B. Miller, of Syracuse, in the Chair.

(Continued from page 1100.)

Puerperal Wound Intoxication and Wound Infection; an Historical and Critical Review of Childbed Fever.—Dr. Henry Schwarz, of St. Louis, said that isolated cases of puerperal fever had occurred at all times among civilized nations, but the dreadful epidemics of this disease appeared with the advent of the lying-in hospitals, and they became more dreadful when frequent autopsies were made in search of the cause of the disease. Oliver Wendell Holmes was the first to point out the contagiousness of puerperal fever and the means for preventing it. His epoch making essay, The Contagiousness of Puerperal Fever, appeared in 1843. Semmelweis, in 1847, was the second to insist on the same points and to demonstrate the correctness of his views by reducing the mortality from childbed fever in his Vienna clinic. The appeals of Holmes and Semmelweis remained unheeded until the advent of Listerism and the establishment of bacteriology.

Hungary, the native country of Semmelweis, had honored his memory by having his ashes removed from Vienna and depositing them in an honor grave at Budapest. A memorial tablet pointed out the house in which he was born, and a grand Semmelweis monument had been erected on one of the finest squares in Budapest. The medical profession of the United States had almost forgotten that Holmes had equal if not greater claim to be remembered as the discoverer of the nature of puerperal fever. Most textbooks did not mention him, while they did justice to Semmelweis; the one pleasing exception was the textbook of Barton Cooke Hirst.

Bacteriological classification had caused many teachers to fail to present to their students a clear subdivision of clinical pictures, and while the writer insisted on the necessity of ascertaining the nature of the infecting germ by smears and cultures, he likewise insisted on the advantage of sharply separating wound intoxication, or sapræmia, from wound infection, and of subdividing wound infection into the milder and more or less localized forms which usually got well, namely, puerperal ulcers, puerperal endometritis, puerperal parametritis, puerperal perimetritis, and puerperal phlebothrombosis, and into the general infections which were inclined to be fatal, namely, pyæmia, general peritonitis, and general sepsis.

At present the medical profession was fully acquainted with the nature of puerperal infection and with the means which would absolutely prevent it. In well managed institutions infection had been driven out, but, nevertheless, thousands of young mothers died yearly in the United States whose lives could be saved. Who was to blame? The cause lay partly in the inadequate obstetrical training which the medical schools until recently provided; this cause was now rapidly disappearing. The principal cause lay in the facts that throughout the United States a large part, in the large cities the greater part, of the obstetrical work was done by midwives, and that with few exceptions no laws existed regulating the practice of midwives. The writer pleaded for the enactment of such laws and for putting the schools for midwives under the control of State boards. The exceptions were Missouri, Louisiana, Ohio, Wyoming, Utah, and the Philippine Islands; their laws provided for examination and registration, but not for control of the schools. Maine and Mississippi especially declared that their medical practice acts did not apply to midwives; the law of Mississippi said that females engaged in the practice of midwifery were not prohibited from such practice, but were entitled to engage therein without a license.

Serum Therapy and Bacterial Vaccines in the Treatment of Puerperal Septichæmia. — Dr. Schwarz said in this second paper that since Marmorek's antistreptococcic serum was placed upon the market, in 1895, he had used the various antistreptococcic sera in those cases of severe acute puerperal sepsis which, according to his judgment, were hopeless under other forms of treatment. The first case, in 1896, was one of severe pyæmia, and the patient recovered; no bacteriological diagnosis had been made. In all other cases cultures made from the blood proved the presence of streptococci; every one of these patients died. Streptococci were found in the blood oftener than was formerly supposed, even in the more or less localized infections, but in these the serum was not employed.

When bacterial vaccines were recommended in the treatment of acute infections the writer not only considered such use hopeless and illogical, but feared that it would injure the reputation of vaccines in their legitimate field. In acute streptococcic infections billions of streptococci were found in the blood; they died by millions and their bodies were dissolved, liberating thereby the endotoxine which during life was retained in the capsule, but which now swamped the system. The formation of antibodies under such conditions was very feeble or at a standstill, and to inject millions more of dead germs, with their endotoxines, showed as much sense as the injection of morphine into a patient dying with morphine poisoning.

To prove his contentions, the writer caused to be undertaken a series of experiments on rabbits, which proved the following points: 1. Vaccination after inoculation had no influence on the infection; all animals died in three days, the same as the control animal. 2. Vaccination simultaneous with inoculation had no influence on the infection; all animals died in three days, the same as the control animal. 3. Prophylactic vaccination produced immunity, but it must extend over a considerable period and vaccination must be stopped ten days before inoculation. Intraperitoneal and intravenous vaccination prolonged the duration of the infection so that animals so vaccinated died two days later than the control animal. Subcutaneous vaccination alone was effective, and animals vaccinated every four days from July 24th to August 28th, and inoculated September 7th, remained well, while the control animal died in three days. Excessive vaccination (fifty to two hundred millions in average weight animals) produced no ill effect beyond a temporary refusal of food. The experiments were being continued.

Acute Pancreatitis.—Dr. John W. Poucher, of Poughkeepsie, N. Y., reported two cases. They seemed to point to two indications, namely, early and free incision down to the pancreas and adequate drainage.

Acute Hæmorrhagic Pancreatitis.—Dr. John W. Keefe, of Providence, R. I., reported eight cases. Two of the patients recovered. Two were operated on twice.

Perforating Gastric Ulcer.—Dr. Thomas B. Noble, of Indianapolis, reported two cases of peritonitis due to perforating peptic ulcers. The pathology and symptomatology were very analogous to those of perforation of any hollow viscus of the abdomen. The diagnosis must depend upon the recognition of a demonstrable peritoneal injury as shown by sudden severe pain about the umbilicus or epigastrium, with local tenderness, followed by vomiting and the general symptoms of shock. Careful inquiry revealed a period of gastric disorder antecedent to the acute attack. Symptoms of acute peritonitis, more or less general in character, rapidly ensued, and it might be that they would overshadow all others at the time of observation, as happened in his first case.

Public and Private Hospitals.—Dr. Joseph Price, of Philadelphia, pointed out the importance of these hospitals in the education of young physicians and nurses and the clinical instruction of practitioners.

Torsion of the Great Omentum.—Dr. William J. Gillette, of Toledo, said that the diagnosis prior to operation was difficult and uncertain. He pointed out the diagnostic signs that were available, also spoke of the frequency of this condition and its mortality, thirteen per cent., which should warrant its more careful study. The case he reported was unusual and made it probable that death from gastric and colonic hæmorrhage as a consequence might ensue.

Cæsarean Section.—Dr. J. H. Carstens, of Detroit, reported a case in which the pregnant uterus was within an umbilical hernia. Mrs. M., aged forty, mother of three children, widow for ten years, married again a year ago and grew very fleshy. She became pregnant, and toward the end it was found that the uterus was in the hernial sac and the abdomen pendulous, hanging down to the knee. On vaginal examination the uterus could not be felt. It was pulled up, Cæsarean section was resorted to, and this was followed by recovery.

The High Operation in Cæsarean Section.—Dr. William H. Humiston, of Cleveland, recommended the substitution of the Cæsarean section for the high forceps operation, which was attended with a mortality to the mother of ten per cent. and to the child of nearly twenty-one per cent. The technique employed in the modern Cæsarean operation had been so perfected, and the indications for the operation so widened, that it was now very frequently resorted to in order to give both mother and child greater chances for life. The rapidity with which this operation could be safely performed by an experienced abdominal surgeon was an important factor for the safety of the mother and the life of the child. Modern aseptic technique and favorable surroundings were essential and would insure practically no mortality, provided the mother had not already been infected by repeated examinations and efforts to deliver. In all cases in and near a city or town where hospital accommodations were modern the patient should be transported to such an institution for operation and convalescence. Dr. Humiston detailed a case in which he resorted to the high operation with success.

Cæsarean Section by the Small Median Incision above the Umbilicus.—Dr. Asa B. Davis, of New York, stated that, of the seventy-eight Cæsarean sections performed by him, the first three were done in tenements. The uterus was drawn out. Since August 12, 1903, he had done the operation seventy-five times, and in no instance had the uterus been removed from the abdomen. Beginning with case four, a much smaller incision was used, half above and half below and to the left of the umbilicus. In the seven cases following this one he gradually made the incision smaller and carried it higher up until November 20, 1904, he, so far as he knew, first independently conceived and practised the small high median incision entirely above the umbilicus. More than two years after this date an allusion to the high incision was brought to his attention in Blundell's *Midwifery*, published in 1842. There was no reason why this operation should be singled out from all others as one which must be performed in great haste. It should be done with the deliberation called for in any other abdominal operation. There was great danger in doing othewise. Several times the writer had found the intestine in front of the uterus. Once he had seen it injured. The incision should be long enough to allow of easy extraction of the child, but the abdominal wall at this point in the full term woman was thin and stretched easily. The small high incision did not allow of easy exposure or escape of the abdominal contents. Not infrequently all that we saw was the uterus and a small portion of omentum. This wound was away from the site of greatest strain upon the abdominal wall, at a point reinforced by the recti muscles as they approached each other toward their upper attachments. It was small. He had never seen hernia following it.

Secondary Repair of Complete Perineal Lacerations; its Technique and Results.—Dr. Edward J. Ill, of Newark, N. J., said there were still many failures resulting from the operation for complete laceration of the perinæum. His first operation after the method to be detailed was done on February 1, 1891. A patient with doubtful improvement had the power of perfect retention within a few months. Altogether, fifty-six cases were reported, all of which showed remarkable and uniform success. Twenty-six cases were complicated by other operations. In his operations he followed the principle laid down by Sänger, as in the Tait operation in 1887. The operation was essentially a flap splitting operation and could be divided into six distinct steps: 1. The incision. 2. The flap splitting. 3. The suture of the rectum. 4. The suture of the perinæum. 5. The suture of the vagina. 6. Twisting of perineal sutures.

The operation he described was a modification of the Sänger-Tait operation. The incisions were of an H-shape, beginning at a point just outside of the orifices of Bartholin's glands, extending downward and backward just outside of the retracted sphincter. The crossbar of the H was carried exactly across at the mucous membrane of the rectum and vagina. Two flaps were formed, an anterior and a posterior. The posterior one denuded the ends of the torn sphincter. The suture of the rectum was done with the finest catgut in the denuded tissue of the posterior flap. He preferred silver wire for the perinæum. Three sutures took care of the sphincter. The fifth step consisted of suturing the anterior flap of the vagina. He urged great exactness in the coaptation of the wound when twisting down the sutures of silver wire. These sutures were cut on the ninth day. The after treatment consisted in moving the bowels in forty-eight hours, preceding the act of defæcation by a sweet oil injection. It was best to have the first movement with the patient on her left side, the nurse supporting the newly made perinæum. Urination was usually normal, and the patient was allowed to sit on the commode rather than be catheterized. She should be well aware of her retention powers at the time the sutures were removed.

Intussusception in Infants.—Dr. Herman E. Hayd, of Buffalo, said that the treatment of this condition was surgical, and the mortality increased tremendously the longer the operation was delayed. Injections, irrigations, and insufflations were too uncertain to be practical and scientific, but in recent cases they were often of value in assisting subsequent reduction after the abdomen was opened. The operation should be done quickly, and no time should be lost in fruitless manipulations of the bowel. It was better generally to eviscerate at once and reduce the mass outside than try to effect its reduction within the belly cavity.

Conservatism in Operations on the Uterine Appendages.—Dr. Lewis C. Morris, of Birmingham, Ala., drew the following conclusions: 1. No woman under forty years of age should have all of both ovaries removed, except in the presence of tuberculosis or cancer. 2. Resection or amputation of diseased parts and plastic work on the tubes would occasionally be followed by conception. 3. Even in the presence of infection and more or less involvement of both tubes and ovaries, plastic work, followed by pelvic drainage and the Fowler position, might be followed by regeneration. 4. Radical or sacrificial surgery and conservative surgery had about the same mortality, but a vastly different morbidity. 5. An occasional secondary operation might become necessary, which might have been avoided by doing radical work.

Intravenous Injection of Magnesium Sulphate in Bacteriæmia.—Dr. Raleigh R. Huggins, of Pittsburgh, stated that in the study of drugs causing hyperleucocytosis, it was desired to find out, if possible, whether magnesium sulphate might act in this manner when administered intravenously. After a careful study in both rabbits and the human subject, it was decided that it did not produce a regular increase in the leucocytes when thus administered. During this study a number of intravenous injections of magnesium sulphate were administered to human beings. It was determined that it could be given intravenously without any apparent harm to the patient. Experiments showed that a one per cent. solution in a normal saline solution would not produce hæmolysis. It would not precipitate the globulins, as stated by Teubusher, when given in this dilution, and the writer had seen no effect upon the specific gravity of the urine. It was decided that thirty grains in eight ounces of normal saline solution could be safely administered intravenously to the average individual. It must be thrown slowly into the vein at a temperature of from 105° to 108° F. The time occupied in allowing this quantity to run into the vein was twenty minutes. If it was allowed to flow into the vein rapidly, respiration became embarrassed and the patient complained of heat all over the body. It had been given in this manner fifty times either by the writer or his assistants, and the results in many instances had been extremely gratifying. It had been given daily for several days. It was during this study that it was determined to try its use in a patient suffering from puerperal infection. A number of patients who were beginning a typical course, similar to others who had died in spite of all treatment, had been treated by intravenous injections of magnesium sulphate with apparent benefit. Its use had been limited almost entirely to the treatment of puerperal infection, and the number of cases treated was too few to warrant any conclusions.

Fibromyomata of the Uterus Complicating Pregnancy, Labor, and the Puerperium.—Dr.

RALPH WALDO LOBENSTINE, of New York, read a paper which was based upon a study of one hundred cases occurring at the New York Lying-In Hospital. The chief deductions were: 1. A myomatous condition of the uterus predisposed to sterility. Parvin stated that, while the average sterility was one in eight, it was one in three in women with myomata. Charpentier's figures corresponded closely to these. 2. The tendency to abortion was increased. In the bad cases both spontaneous and artificial abortion might prove difficult to handle by the natural channel, and was most dangerous to the life of the individual. In the severe cases, where it was difficult to gain access to the cavity of the uterus proper, and in the presence of actual hæmorrhage, laparotomy was the operation of choice. 3. The great majority of the patients that did not abort early proceeded through pregnancy, labor, and the puerperium with few or no symptoms; therefore operative interference was but rarely indicated during pregnancy and was as a rule meddlesome midwifery. He made this statement cautiously, for he knew well that in the minds of many it would be open to criticism. The operation of myomectomy during pregnancy was just now very popular, but he for one believed it was rarely indicated. The results of myomectomy were none too good. Occasionally it might be wise to do a myomectomy, and occasionally necessary to do a hysterectomy, but as a rule conservatism should be the watchword. 4. Nature accomplished wonders at the time of labor, overcoming any apparent dystocia, in a large percentage of cases. At the time of delivery, avoid all possible trauma to the tumor. 5. With the development of the symptoms of gangrene in a myoma in the puerperium, operate early to save the life of the patient.

Two Right Sided Femoral Hernias in the Same Patient.—Dr. N. STONE SCOTT, of Cleveland, reported an interesting case, and the points of special interest, as illustrated by him, were the rarity of external femoral hernia; the importance of making a correct and accurate diagnosis; the possibility of the coexistence of an external and internal femoral hernia on the same side of the patient; the ease of overlooking the external when it was associated with the internal, or more common, form; the operative technique of the external femoral hernia being not essentially different from that of internal femoral hernia. Lastly, where both varieties were operated upon on the same side great care was necessary to prevent interference with the functions of the bloodvessels.

Puerperal Eclampsia.—Dr. E. GUSTAV ZINKE, of Cincinnati, read a paper on this subject in which he drew the following conclusions: 1. All cases of puerperal eclampsia were not alike; much depended upon the extent to which the kidneys and liver were involved. The so called malignant form, as the term implied, was fatal from the beginning. The so called benign variety ended in recovery sometimes in spite of the treatment adopted. The variety of mean gravity was without doubt favorably influenced in its course by careful and judicious treatment. 2. The prognosis for both mother and child was much worse when the convulsions supervened during pregnancy, the maternal mortality ranging between thirty-five and fifty per cent., and the fœtal mortality between sixty-five and seventy-five per cent. The prognosis of intra partum convulsions was more favorable, maternal as well as fœtal, and amounted to about twenty-five per cent. The maternal mortality of post partum convulsions was, as a rule, about seven per cent. In his own experience, in only two cases, it was fifty per cent. 3. The most important treatment of puerperal convulsions was prophylaxis before the appearance of symptoms as well as before the eclamptic attacks when prodromal signs existed. The patient must be protected from injury during the convulsions, and the duration and frequency of the paroxysms should be controlled and abbreviated medicinally rather than surgically. Veratrum viride in sufficiently large doses was the remedy par excellence to reduce the blood pressure and the pulse frequency. Hot baths and hot packs, judiciously employed, and free but not excessive catharsis, strict milk diet, and the recumbent position were of almost equal importance. 4. Chloral in large doses per rectum, if the patient was very restless during the intervals of the attacks, was an excellent remedy. Chloroform inhalations, especially if of long duration, should be regarded as a source of great danger. The same might be said of frequent and large doses of morphine, though both these drugs had their ardent advocates. 5. The antitoxine treatment (the thyreoid, parathyreoid extract, and nephrine) might play an important part in the future in the treatment of eclampsia. 6. Saline and sugar water instillations could do no harm and might do a great deal of good. 7. If, of late years, the maternal mortality of puerperal eclampsia had been reduced at all, it was the direct result of careful prophylaxis and intelligent medical care. Surgery had contributed nothing to it. The dictum "assist in labor, but do not induce it," or "treat the convulsion and let the pregnancy take care of itself," was better than the dictum "empty the uterus as soon as possible in every case of puerperal convulsions, no matter what the period of gestation." 8. Decapsulation of the kidneys and manual, balloon, and metal dilatation of the cervix, especially the old time *accouchement forcé*, were in the opinion of the author hardly justifiable and should have no place in the treatment of puerperal eclampsia. 9. If, however, the symptoms were very threatening and the medical care above described failed to bring about promptly an amelioration in the patient's condition, an early delivery might be desirable. If the patient was near term, but not in labor, the conservative Cæsarean section should be selected. If the patient was just within the period of viability, vaginal hysterotomy was the proper procedure. If the fœtus was not viable before the end of the sixth month of gestation, deep cervical incisions would easily relieve the uterus quickly of its contents. 10. No one had a right to perform any of these three operations unless he was experienced and familiar with the technique of each; and in every instance the patient should have the benefit of strict asepsis. Without these requirements it was best to rely entirely upon the medical care outlined.

Pelvic Reflexes.—Dr. ROBERT T. MORRIS, of New York, spoke of afferent and efferent reflexes, and said that in a certain proportion of patients with pelvic reflexes there was the neurotic habit. These patients were neurasthenics. If a surgeon took out one ovary for pelvic pain, the patient was just as badly off as before the operation. If the other ovary was removed, she was just as badly off as before. The surgeon must deal with neurotic patients with a great deal of intelligence. They represented a class calling for surgery, but the surgeon should beware of patients with pelvic pains, ovarian and tubal troubles, and neuralgic pains, particularly those of the neurotic or neurasthenic type. We had a group of disturbances proceeding from a scar of the cervix. How were we going to determine whether we were to operate in a case of reflex trouble with a torn cervix? Very many patients had torn cervices. Did the cervix require operation for its repair? Did we do the right thing if we operated because we found tears and scars? No. We were not to operate in such cases unless there were definite reasons for so doing. If one should press on a scar of the cervix with his finger nail or with the sharp point of a retractor, and bring out instantly that reflex, then the case was one requiring operation for reflex disturbance; but if one should press on a scar and the patient did not know it, or if one should press on another scar and the patient did not know it, we should not operate in that case, no matter how much the cervix was torn, for the relief of reflex disturbance. One might operate for the repair of a torn cervix on general mechanical principles, but not for the object of relieving the efferent reflex.

Officers.—The following officers were elected for the ensuing year: President, Dr. Herman E. Hayd, of Buffalo; vice presidents, Dr. Henry Schwarz, of St. Louis; and Dr. Lewis C. Morris, of Birmingham, Ala.; secretary, Dr. William Warren Potter, of Buffalo; treasurer, Dr. X. O. Werder, of Pittsburgh. Louisville was selected as the place for holding the next annual meeting, beginning on the fourth Tuesday in September, 1911.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

Tropical Medicine and Hygiene. By C. W. DANIELS, M. B. Cantab., M. R. C. P. Lond., Director of the London School of Tropical Medicine, Lecturer on Tropical Diseases, London Hospital, etc. With a Chapter on Snakes, by A. ALCOCK, C. I. E., M. B., F. R. S., Lieutenant Colonel I. M. S. (retired). In Three Parts, with Colored and Other Illustrations. Part I. Diseases due to Protozoa. Part II. Diseases due to the Metazoa. New York: William Wood & Co., 1910. Part I, pp. iv-264; Part II, pp. viii-283. (Price, $3 a volume.)

The development of tropical medicine as a department of general medicine within the last few years has been a steadily increasing story of efficiency. The work done is large in amount and excellent in quality. The schools of tropical medicine in various countries are well equipped and well attended. None is more successful than the London School of Tropical Medicine, of which the senior author of the work before us, Dr. Daniels, is the able and efficient director. The junior author, Surgeon Wilkinson, has had a large experience in India. Consequently one expects to find in the work of these men a practical working guide to the problems of tropical hygiene, pathology, parasitology, and practice.

Part one deals with the life history, classification, and bionomics of protozoa in general, and treats of malaria, hæmoglobinuric fever, piroplasmosis, trypanosomiasis, kala azar, Oriental sore, relapsing fever, tick fever, syphilis, yaws, granuloma pudendi, and amœbiasis. Because yellow fever is in all probability due to a protozoan parasite, it is considered in this part of the work. We think dengue might have had a place here, as the work of Ashburn and Craig in the Philippines shows almost conclusively that it is transmitted by a mosquito, and because in its clinical manifestations it is not unlike its more serious associate, yellow fever. Naturally, in this part of the book much attention is paid to the life history of the various intermediate hosts of the parasites, mosquitos, ticks, and other insects.

There are a few mistakes in the spelling of proper names discoverable in the book; for example McAllum for McCallum, Caroll, for Carroll, and Kilburne for Kilbourne. Reed and Carroll are credited with forming the United States Army Commission for the investigation of yellow fever in 1899, 1900, and 1901, while that commission included also Dr. Jesse Lazear, who lost his life as the result of an experimental infection, and Dr. Aristides Agramonte, a Cuban immune.

In part two the diseases dependent upon trematode infection, cestode infection, nematode infection, myiasis, and snake bite are discussed. The chapter on the last named condition is contributed by Colonel A. Alcock.

Tuberculosis. A Preventable and Curable Disease. Modern Methods for the Solution of the Tuberculosis Problem. By S. ADOLPHUS KNOPF, M. D., Professor of Phthisiotherapy at the New York Postgraduate Medical School and Hospital, Associate Director of the Clinic for Pulmonary Diseases of the Health Department, etc. Second Edition. New York: Moffat, Yard, & Co., 1910. Pp. xlii-394. (Price, $2.)

We are glad to see this second edition of Knopf's very valuable textbook on tuberculosis. We spoke of the first edition in our book notices (July 17, 1909, p. 141) and editorially (August 7, 1909, p. 270). We can hardly add anything to what we then said. It is a valuable work, one which will be not only of great help to the physician but also a useful guide to the layman, as it contains many practical hints. The author has added his autobiography as a preface.

Die experimentelle Chemotherapie der Spirillosen (Syphilis, Rückfallfieber, Hühnerspirillose, Frambösie). Von PAUL EHRLICH und S. HATA. Mit Beiträgen von H. J. NICHOLS, New York, J. IVERSEN, St. Petersburg, BITTER, Kairo, und DREYER, Kairo. Mit 27 Textfiguren und 5 Tafeln. Berlin: Julius Springer, 1910. (Through Rebman Company, New York.) Pp. viii-164.

This is the latest work by Paul Ehrlich. The book contains a prologue and epilogue by the German chemotherapeutist; an essay on the experimental foundation of chemotherapy of spirilla by the Japanese physician S. Hata, who for a number of years has been Ehrlich's assistant; an article from Henry J. Nichols, of the Rockefeller Institute of New York, on the effect of "606" on *Spirochæta pertenuis* in animals; another by Julius Iversen, of St. Petersburg, on the chemotherapy of recurrent fever; and the report by Bitter and Dreyer, of Cairo, on eighty-five cases of recurrent fever treated in Egypt, thirty-one symptomatically, forty-one with atoxyl, and thirteen with "606."

It is not necessary to introduce Paul Ehrlich to the medical profession. He is the third of the great German therapeutists: Koch with tuberculin, von Behring with antidiphtheritic serum, and now Ehrlich with dioxydiamidoarsenobenzol. Chemotherapeutics was originated by Ehrlich. While formerly the chemists prepared drugs to be experimented with by the physicians, the chemotherapeutists now give certain points to the chemists from their experiments, upon which the chemists must base the construction of drugs.

Ehrlich's conclusions are of great interest. He describes the chemotherapeutical studies of trypanosomes as undertaken by him and his school, and his technique of researches, and concludes his remarks by a review of the results achieved and to be expected from the use of dioxydiamidoarsenobenzol. The bibliography (up to October 5th) would be very disappointing on account of its incompleteness if it did not give Ehrlich's view of articles worthy to be mentioned.

Naval Hygiene. By JAMES DUNCAN GATEWOOD, M. D., Instructor in Naval Hygiene, United States Naval Medical School, Washington, etc. Prepared by Direction of the Bureau of Medicine and Surgery and Published by Permission of the Navy Department. With Eight Colored Plates and 105 Other Illustrations. Philadelphia: P. Blakiston's Son & Co., 1909. Pp. xiv-779. (Price, $6.)

The past forty years have seen remarkable changes in the navies of the world. The United States has been second to no nation in the application of steam to the needs of its navy, in the adoption of steel armor for its ships, and in the alteration of its architecture to accommodate the change from sails to steam, to accommodate modern ordnance, and to adopt the change from the old methods of lighting by lanterns to the new methods of illumination by electricity. Accompanying these changes of architecture, ordnance, lighting, etc., there has been a progressive improvement of the personnel of the navy, both in character and in efficiency. All these changes have demanded constant watchfulness on the part of the Medical Department of the Navy over the hygiene of the vessels and their crews, over shore stations, and over hospitals.

The experience gained during this transition period from wooden vessels propelled by sails, lighted by oil lanterns, and unheated, to steel battleships and cruisers propelled by steam, lighted by electricity, and heated by steam, is embodied in the book by Medical Inspector Gatewood. It is an essential in the library of the naval surgeon. It is, furthermore, interesting and instructive to the civil physician who cares to know of the work of his brother physicians afloat. The first chapter, Naval Vital Statistics; Basis of a Navy's Hygiene, is a piece of original work evolved from a study of the statistics in the possession of the Navy Department, and is the first careful study of those statistics to be published. Dr. Gatewood is to be congratulated on the way in which he has prepared this fundamental chapter of his work. The second chapter deals with The Air Without the Ship and the Air Within the Ship; the third chapter treats of Light Without and Light Within the Ship; the fourth chapter is devoted to The Ship's Water Supply and Drainage. The Navy's Food and The Navy's Clothing are the titles of chapter five and chapter six respectively. Disinfection on the Ship and Naval Recruiting are the titles of the last two chapters.

MEDICOLITERARY NOTES.

Sour milk may be a very fine food and its use may conduce to longevity, but it should not be begun too soon. If an infant gets a drachm or two into its stomach, there will be lively times for parents and doctor, and quick action is necessary if longevity is desired.

* * *

The word dilatation gives many worthy persons anxiety. It is very properly derived from *dilatatum*, supine of *dilato*. Dilation, which they would substitute, is not English, but if it were, would probably mean a setting at large, as of prisoners; it is derived from quite another verb, *differo, dilatum* Parallel derivations will make the matter plain: Nation is derived from *nascor, natum;* natation from *nato, natatum;* diction comes from *dico, dictum;* but dictation from *dicto, dictatum.* One man has no more authority for substituting dilation for dilatation than for replacing rotation by rotion for the sake of mere brevity.

* * *

Scarcely has the American public painfully learned that acting is an art than there comes Gelett Burgess in the December *Delineator* to say it is no such thing, but an instinct. It is not often that a magazine article exhibits so complete an ignorance and misunderstanding of its subject. Our stage is not the laughing stock of Europe, for Europe knows nothing about it, and, furthermore, quite as bad acting is to be seen in Paris, except at the endowed theatres, as ever startled Broadway. The *Delineator* has now found homes for over two thousand orphans and a pleasing double page picture shows a number of them looking perfectly satisfied.

* * *

Our students are instructed to warm their hands before undertaking a physical examination. This simple precaution was evidently ignored by the ancients. Hear Martial :

> Languebam, sed tu comitatus protinus ad me
> Venisti centum, Symmache, discipulis;
> Centum me tetigere manus, aquilone gelatæ,
> Non habui febrem, Symmache: nunc habeo.

I was indisposed, but you came, Symmachus, accompanied by a hundred students, and a hundred hands, frozen by the north wind, were laid upon me; I had no fever, Symmachus, but I have now. The poet does not explain whether he thinks his rise in temperature was due to reaction from the cold applications or to his indignation at being made the subject of a clinical lecture.

Sir Arthur Conan Doyle gave an address at St. Mary's Hospital, London, at the opening of the session, reported in the *Lancet* for October 8th. In this address, which he called The Romance of History, Sir Arthur stated that one advantage of our modern system of elections was that they gave us, by reason of their strenuous nature, at least healthy and robust representatives, for none other could survive the strain. Sir Arthur repeated one of the less known anecdotes of Abernethy, who, in his time, once gave an address to medical students; when he saw the crowds assembled to greet him, he threw up his hands and exclaimed, "Good God, gentlemen, what is to become of you all?"

* * *

A System of Syphilis is the somewhat unusual name chosen for a six volume subscription work soon to be issued in Great Britain.

* * *

It is not only in the United States that ignorant people decry medicine for its apparent helplessness in certain crises. Recently in England Lord Morley spoke of "the ignorant impatience of the claims of physical science which . . . is the distinguishing qualification of the professional politician and one of the chief causes of the disasters which his ascendancy entails upon the community."

* * *

There is a field for a new, scientific, and interesting history of medicine, and we hope the large work by Professor Max von Neubarger, of Berlin, will prove worthy of its subject. The history of medicine is the history of intellectual development and is closely bound up with the gradual unfolding of civilization. The German work is being translated by Dr. E. Playfair and will have an introduction by Professor William Osler.

* * *

The Wasters, by William Hard, in the December *Everybody's,* is as fascinating a bit of irony as we have had the pleasure of reading for a long time. It is a talk about idle, childless women and shows that they are the inevitable production of evolution and environment, and probably quite unable to understand the reproaches that are leveled at them. The Gift, by Elizabeth Newport Hepburn, is a story of an unusual young man who thought it his duty to enter the marriage bed a virgin. The advisers of Louis XIV and other historical figures thought differently. Walter Lippmann, in An Open Mind: William James, shows that we have lost a very fine and uncommon character, a democrat in the strict sense of the word.

* * *

A man who sees a full length photograph of himself for the first time is apt to blame the camera for his squat appearance. As a matter of fact, the camera is unerring, but the man's eye has been misled by the constant sight of the figures in magazine illustrations, which are almost always drawn tall out of all proportion. The fashion papers must give rise to an immense amount of uncomprehended dissatisfaction, for no living woman can ever possibly get the effect of a gown as it appears on one of the divinely tall ladies in a plate. To get this humbugging effect in a photograph, models have been made to stand on a stool around which the train is so disposed as to hide her feet. All of which we commend to the attention of the department of weights and measures, to say nothing of married physicians, who may thank us for the hints.

* * *

Magazines which pride themselves on the trustworthiness of their advertising pages are innocently printing the announcements of hair tonics. The hair does not respond to tonic or stimulant applications, but gentle brushing helps to keep it in good condition. Soap and water will remove dandruff, and a small quantity of oil removes the temporary harsh dryness of the hair after such washing, but, up to this writing, no elixir yet discovered will prevent either baldness or canities. As well seek the fountain of youth, bald and grizzling friend!

* * *

Idea for a newspaper advertisement: Take 1212; twice as strong and quick as any imported German medicine for blood poisoning, falling hair, sore throat, etc., and purely vegetable; made by Americans. Beware of cheap foreign products of similar names, which contain minerals.

* * *

A distinguished scientific inventor has recently issued a book in which he has endeavored to reduce poetry to a science and to demonstrate that certain verses are beautiful simply because they conform to certain rules which he professes to have discovered. The main result has been ire and derision on the part of the poets. Now our scientist, a veritable modern Cato, has put his name to a patent cure for an ailment familiar to dwellers near the sea or our great lakes. Perhaps he thought that he, who has done so much to devise methods of exterminating humanity, owed something on the other side of the ledger. Had he no medical acquaintance to tell him that his supposed discovery was, like all lay medical "finds," merely a resurrection of a method long discarded by the profession?

* * *

Life, in a recent issue, had the picture of an experimental physiologist being stoned by an ignorant and brutal mob, issuing apparently from the back door of the infernal regions. The cartoon is deservedly severe on the mushy and disingenuous antis, but it apparently represents a remarkable change of viewpoint on the part of the publication.

* * *

Balneæ pensiles, mentioned by Asclepiades, seem to refer to buckets filled with water and hanging in such a way as to be easily overturned to discharge their contents on the bather; if so, the writer is to be credited with the invention of the shower bath, which seems now to be superseding all other baths in newly built houses.

NEW PUBLICATIONS.

Weiss, Richard.—Manual of Clinical Pathology. For the General Medical Practitioner. Comprising the Examination of Urine, Stomach Contents, Fæces, Blood, and the Serum Diagnosis of Syphilis, Tuberculosis, Typhoid Fever, etc. In Collaboration with George Herschell, M. D., London, and Andrew Charles, F. R. C. S., Dublin. London: J. & A. Churchill, 1910. (Price, 2s.)

McBride, C. A.—The Modern Treatment of Alcoholism and Drug Narcotism. New York: Rebman Company, 1910. Pp. vii-376. (Price, $2.)

Hollander, Bernard.—The Mental Symptoms of Brain Disease. An Aid to the Surgical Treatment of Insanity due to Injury, Hæmorrhage, Tumors, and Other Circumscribed Lesions of the Brain. Preface by Dr. Jul. Morel, Late Belgian State Commissioner in Lunacy. New York: Rebman Company, 1910. Pp. xviii-237. (Price, $2.)

Hart, David Berry.—Phases of Evolution and Heredity. New York: Rebman Company, 1910. Pp. xi-259. (Price, $2.)

Fein, Johann.—Hints for the General Practitioner in Rhinology and Laryngology. Translated by J. Bowring Horgan, M. B., B. Ch., Late House Surgeon at the Hospital for Diseases of the Throat, London. With Forty Figures in the Text and Two Photographic Plates. New York: Rebman Company, 1910. Pp. xvi-223. (Price, $1.50.)

Ehrlich, P., and Lazarus, A.—Anæmia. Part I. Volume I. Normal and Pathological Histology of the Blood. Second Edition. Enlarged and to a Great Extent Rewritten by Dr. A. Lazarus and Dr. F. Naegeli. Translated from the German by H. W. Armit, M. R. C. S., L. R. C. P. London. With Five Illustrations in the Text and Five Colored Plates. New York: Rebman Company, 1910. Pp. xiii-218. (Price, $4.)

Vierordt, Hermann.—Medizinisches aus der Geschichte. Dritte vermehrte Auflage. Tübingen: H. Laupp'schen Buchhandlung, 1910. Pp. 213.

Sommer, Robert.—Klinik fur psychische und nervöse Krankheiten. V. Band. 3. Heft. Halle a.S.: Carl Marhold, 1910. Pp. 197-288.

Decomps, Pierre.—Le Tronc cœliaque. Travail de l'amphithéatre d'anatomie des hôpitaux. Recherches d'anatomie chirurgicale sur les artères de l'abdomen. Paris: G. Steinheil, 1910. Pp. 205.

Blumenfeld, Felix.—Verhandlungen des Vereins deutscher Laryngologen, 1910. Wurzburg: Curt Kabitzsch, 1910. Pp. 249-432.

Ashhurst, Astley Paston Cooper.—An Anatomical and Surgical Study of Fractures of the Lower End of the Humerus. The Samuel D. Gross Prize Essay of the Philadelphia Academy of Surgery, 1910. Philadelphia and New York: Lea & Febiger, 1910. Pp. 163.

Lehrbuch der Chirurgie. Bearbeitet von Prof. Klapp, Berlin; Prof. Kuttner, Breslau; Prof. Lange, München; Prof. Lanz, Amsterdam; Prof. Payr, Königsberg; Prof. Preysing, Cöln; Prof. de Quervain, Basel; Prof. J. Riedinger, Würzburg; Prof. Ritter, Posen; Prof. Rovsing, Kopenhagen; Prof. Sauerbruch, Zürich; Prof. Schloffer, Innsbruck; Prof. Tilmann, Cöln; Prof. Wilms, Heidelberg; Prof. Wullstein, Halle a.S. Herausgegeben von Prof. Wullstein, Halle a.S., und Prof. Wilms, Heidelberg. Zweite umgearbeitete Auflage. Erster Band: Allgemeiner Teil. Chirurgie des Kopfes, des Halses, der Brust und der Wirbelsäule. Mit 355 zum teil mehrfarbigen Abbildungen. Jena: Gustav Fischer, 1910. Pp. xii-636.

Lejars, Félix.—Urgent Surgery. Translated from the Sixth French Edition by William S. Dickie, F. R. C. S. With Twenty Full Page Plates and 994 Illustrations, of which 602 are Drawn by Dr. E. Daleine and A. Leuba, and 217 are from Original Photographs. Volume II. The Genitourinary Organs, the Rectum and Anus, the Strangulated Hernias, the Extremities. New York: William Wood & Co., 1910. Pp. 580. (Price, $7.)

Fordyce, A. Dingwall.—The Hygiene of Infancy and Childhood and the Underlying Factors of Disease. New York: William Wood & Co., 1910. Pp. xi-289. (Price, $2.50.)

Percival, Archibald Stanley.—The Prescribing of Spectacles. Illustrated with Diagrams. New York: William Wood & Co., 1910. Pp. 159. (Price, $2.)

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Donahoe, Margaret Frances.—A Manual of Nursing. Illustrated. New York and London: D. Appleton & Co., 1910. Pp. x-489.

Menge, George A.—A Study of Melting Point Determinations. With Special Reference to the Melting Point Requirements of the U. S. Pharmacopœia. Hygienic Laboratory Bulletin No. 70. Washington: Government Printing Office, 1910. Pp. 101.

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Official News.

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending November 23, 1910:

Anderson, J. E., Passed Assistant Surgeon. Granted four days' leave of absence from November 14, 1910, under paragraph 189, Service Regulations.

Appleton, T. J., Acting Assistant Surgeon. Granted seven days' leave of absence under paragraph 210, Service Regulations.

Austin, H. W., Surgeon. Granted three days' leave of absence from November 17, 1910, under paragraph 189, Service Regulations.

Bailey, C. A., Acting Assistant Surgeon. Directed to proceed to St. John, N. B., on or about November 22, 1910, for medical examination of aliens.

Banks, C. E., Surgeon. Granted four days' leave of absence from November 19, 1910.

Boggess, J. S., Passed Assistant Surgeon. Leave of absence for one month from November 14, 1910, amended to read one month from November 21, 1910.

Brown, B. W., Surgeon Granted one month's leave of absence upon being relieved by Surgeon F. W. Mead.

Burkhalter, J. T., Passed Assistant Surgeon. Granted one month's leave of absence from December 17, 1910.

Carter, H. R., Surgeon. Directed to rejoin station at Louisville, Ky., reporting at Bureau en route.

Creel, R. H., Passed Assistant Surgeon. Relieved from duty at Chicago, Ill., and directed to report at Bureau for temporary duty; granted three days' leave of absence en route.

Duke, B. F., Acting Assistant Surgeon. Granted twenty-five days' leave of absence from November 11, 1910.

Earle, B. H., Passed Assistant Surgeon. Granted four days' extension of leave of absence en route to station.

Frary, T. C., Acting Assistant Surgeon. Granted ten days' leave of absence from November 22, 1910.

Gahn, Henry, Pharmacist. Granted two days' leave of absence from November 12, 1910, under paragraph 210, Service Regulations.

Gibson, Frank L., Pharmacist. Granted two days' leave of absence from October 28, 1910, under paragraph 210, Service Regulations.

Gill, S. C., Acting Assistant Surgeon. Granted twenty-nine days' leave of absence from December 3, 1910.

Goldsborough, B. W., Acting Assistant Surgeon. Granted two days' leave of absence from November 27, 1910, without pay.

Goodman, F. S., Pharmacist. Granted ten days' leave of absence from December 22, 1910.

Gregory, George A., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 10, 1910.

Hotchkiss, S. C., Assistant Surgeon. Granted seven days' leave of absence en route to station.

Lavinder, C. H., Passed Assistant Surgeon. Directed to inspect the Bacterio-Therapeutic Laboratory in Asheville, N. C., and to attend the meeting of the Seaboard Medical Association to be held at Kinston, N. C., December 6-8, 1910.

Lumsden, L. L., Passed Assistant Surgeon. Granted seven days' leave of absence from November 16, 1910, under paragraph 191, Service Regulations.

Lyons, R. H., Assistant Surgeon. Directed to proceed to the Gulf Quarantine Station for temporary duty.

Moncure, J. A., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 17, 1910.

Nute, A. J., Acting Assistant Surgeon. Granted thirty days' leave of absence from November 27, 1910.

Osborn, J. L., Pharmacist. Granted thirty days' leave of absence from November 28, 1910.

Ryder, L. W., Pharmacist. Granted five days' leave of absence from November 21, 1910, under paragraph 210, Service Regulations.

Sexton, Leo L., Acting Assistant Surgeon. Granted seven days' leave of absence from October 25, 1910, under paragraph 210, Service Regulations.

Sinclair, A. N., Acting Assistant Surgeon. Granted twenty-six days' leave of absence from December 6, 1910.

Stoner, J. B., Surgeon. Granted six days' leave of absence en route to station.

Vogel, C. W., Passed Assistant Surgeon. Granted four days' leave of absence from November 22, 1910.

Wakefield, H. C., Acting Assistant Surgeon. Granted six days' leave of absence from November 14, 1910, under paragraph 210, Service Regulations.

Walkley, W. S., Acting Assistant Surgeon. Granted two days' leave of absence from November 24, 1910.

Warner, H. J. Assistant Surgeon. Granted four days' leave of absence from November 24, 1910.

Wertenbaker, C. P., Surgeon. Detailed to represent the Service at the meeting of the Seaboard Medical Association to be held in Kinston, N. C., December 6-8, 1910.

Williams, L. L., Surgeon. Granted seven days' leave of absence from November 14, 1910, under paragraph 189, Service Regulations. Granted one day's extension November 21, 1910.

Board Convened.

Board of medical officers convened to meet at the Marine Hospital, Port Townsend, Wash., November 21, 1910, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon P. M. Carrington, chairman; Surgeon J. H. Oakley, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending November 26, 1910:

Appel, Daniel M., Colonel, Medical Corps. After being relieved, will proceed to Atlanta, Ga., and report not later than December 31, 1910, to the Commanding General, Department of the Gulf, for duty as chief surgeon of that department.

Davis, William R., Captain, Medical Corps. Will proceed at the proper time to West Point, N. Y., and report on May 1, 1911, for duty until June 1, 1911, when he will return to his proper station.

Eber, Albert H., Lieutenant, Medical Reserve Corps. Ordered to Fort Dade, Florida, not later than December 1st, for temporary duty during the absence of Lieutenant J. R. Hereford, Medical Reserve Corps. Upon completion of this duty he will return to his station, Fort Moultrie, S. C.

Foster, George B., Jr., Lieutenant, Medical Corps. Ordered to proceed to Philadelphia, Pa., on official business pertaining to the Medical Department.

Harris, Henry S. T., Lieutenant Colonel, Medical Corps. Relieved from duty at Headquarters, Department of California, and will assume charge of the Medical Supply Depot, in San Francisco, Cal., relieving Colonel D. M. Appel.

Siler, Joseph P., Captain. Will proceed at the proper time to West Point, N. Y., and report on May 1, 1911, for duty until June 1, 1911, when he will return to his proper station.

Taylor, Blair D., Colonel, Medical Corps. Upon his own application is retired from active service April 30, 1911, after more than thirty-five years' service; granted leave of absence from January 1 to and including April 30, 1911.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending November 26, 1910:

Allen, A. H., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the *Washington.*

Brister, J. M., Surgeon. Detached from the Naval Academy and ordered to duty at the Naval Hospital, Annapolis, Md.

Fauntleroy, A. M., Surgeon. Detached from the Naval Hospital, Philadelphia, Pa., and ordered to the *Solace.*

Field, J. G., Surgeon. Detached from the *Washington* and ordered to Washington, D. C., for examination for promotion and to await orders.

Heiner, R. G., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Academy.

Iden, J. H., Surgeon. Detached from the Naval Hospital, Annapolis, Md., and ordered to the *Washington.*

Longabaugh, R. I., Passed Assistant Surgeon. Detached from the *Washington* and ordered to the navy recruiting station, Cedar Rapids, Iowa.

Robnett, A. H., Passed Assistant Surgeon. Detached from the naval recruiting station, Cedar Rapids, Iowa, and ordered to the Marine Corps rifle range, Winthrop, Md.

Sausser, H. E., Pharmacist. Appointed a pharmacist from November 21, 1910.

Strine, H. F., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

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Births, Marriages, and Deaths.

Married.

Bunker—Caldwell.—In New York, on Saturday, November 12th, Assistant Surgeon Charles W. O. Bunker, United States Navy, and Miss Eleanor Garrett Caldwell.

Died.

Alexander.—In New York, on Tuesday, November 29th, Dr. Samuel Alexander, aged fifty-two years.

Bradley.—In Saginaw, Michigan, on Wednesday, November 16th, Dr. Henry W. Bradley, aged twenty-five years.

Bross.—In Babylon, New York, on Monday, November 21st, Dr. William Robert Bross, aged fifty-seven years.

Carter.—In East Cleveland, Ohio, on Friday, November 18th, Dr. John T. Carter, aged forty-eight years.

Cook.—In New York, on Monday, November 21st, Dr. Stephen G. Cook, aged seventy-nine years.

Edwards.—In Richmond, Virginia, on Sunday, November 27th, Dr. Landon B. Edwards, aged sixty-five years.

Erwin.—In Allendale, South Carolina, on Thursday, November 24th, Dr. Clarence W. Erwin, aged fifty-four years.

Finn.—In Jersey City, New Jersey, on Saturday, November 19th, Dr. Joseph Finn, aged seventy-seven years.

Fox.—In Lafayette, Indiana, on Wednesday, November 16th, Dr. Stiles R. Fox, aged sixty-three years.

Gardner.—In Manassas, Virginia, on Saturday, November 12th, Dr. Flagg Gardner, aged eighty-five years.

Gatchell.—In Washington, D. C., on Wednesday, November 16th, Dr. William F. Gatchell, aged fifty-one years.

Hill.—In Lexington, North Carolina, on Monday, November 21st, Dr. Joel Hill, aged fifty-five years.

Kinsman.—In Columbus, Ohio, on Thursday, November 24th, Dr. D. N. Kinsman, aged seventy-six years.

Larkin.—In Randolph, New York, on Wednesday, November 23d, Dr. Frederick Larkin, aged ninety-seven years.

Miles.—In Yonkers, New York, on Tuesday, November 15th, Dr. Charles Adna Miles, aged fifty-eight years.

Roland.—In Lancaster, Pennsylvania, on Sunday, November 20th, Dr. Oliver Roland, aged sixty years.

Smith.—In Enumclaw, Washington, on Saturday, November 12th, Dr. J. J. Smith, aged forty years.

Stein.—In Columbus, Ohio, on Saturday, November 19th, Dr. George S. Stein, aged seventy-two years.

Williams.—In Collinwood, Ohio, on Thursday, November 17th, Dr. W. H. Williams, aged forty-two years.

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Original Communications.

"606," OR DIOXYDIAMIDOARSENOBENZOL.

An Account of a Visit to Wechselmann's Clinic in Berlin, where Many Hundreds of Patients Have Been Treated with Ehrlich's New Remedy for Syphilis.

A Review of the Literature and Work upon the Subject.

By Edgar G. Ballenger, M. D.,
Atlanta, Ga.,
Lecturer on Genitourinary Diseases, Atlanta School of Medicine.

Having been wonderfully impressed by the results obtained in syphilis after one or two injections of the Ehrlich-Hata preparation, I desire to give an account of my visit to Dr. Wechselmann's clinic in the Rudolph Virchow Hospital, where more patients have been treated with this new remedy than anywhere else in the world. In this great hospital 500 of its 2,000 beds are devoted to skin and venereal diseases; with these unexcelled facilities for clinical and scientific work and with the alert and careful Dr. Wechselmann at its head, one can easily see why Professor Ehrlich selected this place and this man among the first to test the value of "606." While being somewhat sceptical as to the value of this new remedy when I went to Germany, I must now admit that the results are marvelous and have exceeded all reasonable expectations. The more active the lesions and the more malignant the disease the better seem the results or, at least, the more apparent and startling. From a clinical study of the results and from a careful review of the reports upon this remedy I feel justified in stating that it is the most wonderful therapeutic discovery the medical profession has ever made. Diphtheria antitoxine can only cure diphtheria when administered early in the disease, but dioxydiamidoarsenobenzol, or "606" for short, is effective immediately in the primary, secondary, and tertiary stages, as well as in inherited syphilis. The results frequently also appear to be permanent, at least in so far as may be judged by the 13,000 patients who have been treated since March, 1910, and from animal experimentation. A few cases have been reported where the spirochætæ seemed unaffected by the remedy. Whether this was due to immunity of the organism to arsenic or whether to some peculiarity of the host has not yet been explained. Oppenheim has recorded a case where neither "606" nor mercury lessened perceptibly the number of spirochætæ present or improved the visible lesions. Herxheimer has found one and Glück two such cases. Fortunately, such results have been exceedingly rare.

The Wassermann reaction usually becomes negative about from the second to the fourth week, although the time varies considerably in different individuals. In most patients it has remained negative, but the time is still too brief to say positively what the ultimate results are to be. Of great significance, however, is the fact that apes treated with "606" early, after the appearance of an artificially produced chancre, before the secondary stage, can at a later date again be inoculated with syphilis. This could not have occurred had the disease been uncured. Successful inoculation is less frequently possible after the ape is cured, with "606," of more advanced syphilis. The fear that the remedy will be greatly misused and abused when it is placed in the hands of the public seems quite prevalent, for undoubtedly many physicians will be using the remedy who have given no study or thought to the matter and know little of the limitations and contraindications to which it of necessity must be subject. From the start Ehrlich has urged that it should not be used on individuals who have serious organic affections such as cardiac, nervous, vascular, renal, hepatic, pulmonary, retinal, or optic diseases, unless these are known to be of *luetic origin.* It should not be given to patients already moribund or too weak to withstand the rather high temperature and perhaps pain which might arise. It is also a hazardous undertaking to administer this preparation to infants with hereditary syphilis as a sufficient number of organisms may be present to liberate, when killed, enough endotoxine to produce a fatal result. The more extended use of "606" has, however, lessened this danger. Fortunately if the mother of a syphilitic infant or a syphilitic wetnurse is given a dose of "606" the milk will contain enough of antitoxine to cure or apparently cure the infant. The milk is found to contain only a very small amount of arsenic—much too small to effect such a rapid cure; it is therefore assumed that the cure is produced, at least chiefly, by an antitoxine. Ehrlich advises at present that such infants be given an injection later, when in a healthier condition, as it is not known how well they are cured when treated only through the mother's milk. Such a plan will certainly lessen the danger of administering the remedy to infants whose little bodies we know to be reeking with spirochætæ. The fact that the milk of a syphilitic woman, treated with "606," contains sufficient antitoxine to cure a syphilitic infant, opens a very wide field of speculation as to possibilities of procuring at some time, in some manner, enough of this substance from milk or blood serum to cure patients without giving

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them "606" itself. Of course, it is much too early to even guess at the possibilities or character of such a plan of treatment.

THE CHEMICAL STUDIES.

To understand better the method by which spirochætæ may be killed with practically no harmful effects to the body of the host I will quote some of Ehrlich's basic principles. He has sought for many years for a remedy which was *parasitotropic* without being *organotropic;* that is for a preparation which would kill protozoa and yet not be toxic to man. Unless the drug could combine with the germs it could not kill them. He says: "The next thing was to find out how the drugs became fixed to the cells, and the most significant ideas came from the study of drug resisting strains of trypanosomata. Thousands of drugs had been tried against trypanosomes, and those that had curative results fell into three groups: 1. Arsenic group, arsenous acid, then atoxyl, and later the other substitution products of arsenobenzol, as arsacetin and arsenophenylglycol. 2. Azo dyes, such as trypan red, trypan blue, and trypan violet. And, 3, basic triphenylmethane dyes, such as parafuchsin, methyl violet, and pyronin." Strains of trypanosomes could be grown to resist either of the groups, and from Ehrlich's study he reached the conclusion that there must be some special arrangements with affinity for particular chemical groups to fix them to the cells. "These special arrangements, these bonds, he named *chemoceptors.* The chemoceptors of the parasite which fix arsenic, which he called *arsenoceptors,* unite trivalent arsenic (arsenic as in arsenous acid) to the cell. These do not disappear from an arsenic resisting strain, but only become chemically altered so as to have less affinity for arsenic. Now the arsenic must be present in relatively considerable excess before it can unite with the parasites in such quantity as ultimately to destroy them. Under the microscope these drugs are seen to affect the parasites, causing paralyses, slower movements, or swelling."

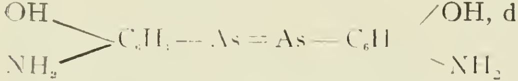
In the body those parasites killed early, just after an injection, evoke an active formation of antibodies, which assist the action of the drug. "A race of trypanosomes resistant to atoxyl was not affected by the ordinary arsenobenzol derivatives, but we found arsenophenylglycin, which overcame their resistance, and in time we immunized them against this too. We had now two strains immune to arsenic, but each proved still susceptible to arsenobenzol derivatives, provided these had acetic acid in their molecules. So besides their arsenoceptors, *trypanosomes* had *acetoceptors,* by whose help they could be fixed to more arsenic and so destroyed. The drug was then attached to the trypanosome not by one, but by several of its receptors, and so I learned there were primary and secondary haptophores. The acetoceptor is the primary haptophore which fixes the arsenic to the cell. If, then, we wish to use the arsenic group against a class of parasites by the method of chemotherapy we can only succeed if we find the special suitable attachment, associate therewith the effective group, and in this way make the specific attachment possible. . . . And so any one who busies himself with chemotherapy must endeavor to find a chemoceptor which shall enable him to force his drug on the parasite concerned." These remarks explain superficially the method by which "606" was discovered and the principle upon which its curative properties depend. It will be readily seen that this is merely an extension of his side chain theory to chemotherapy. Was there ever a fascinating theory developed into a more miraculously practical and useful fact?

Blackstone gives the following explanatory chemical formula:

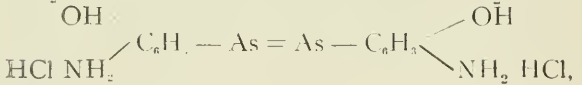
C_6H_6, benzol.

$C_6H_5 - As = As - C_6H_5$, arsenobenzol.

$OH - C_6H_4 - As = As - C_6H_4 - OH$, dioxyarsenobenzol.

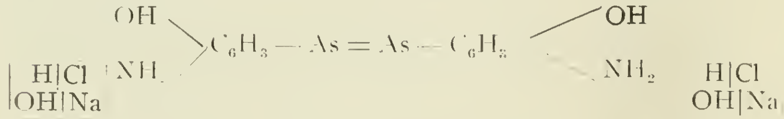


$\begin{matrix} OH \\ NH_2 \end{matrix} > C_6H_3 - As = As - C_6H_3 < \begin{matrix} OH \\ NH_2 \end{matrix}$, dioxydiamidoarsenobenzol.



$\begin{matrix} OH \\ HCl\ NH_2 \end{matrix} > C_6H_3 - As = As - C_6H_3 < \begin{matrix} OH \\ NH_2\ HCl, \end{matrix}$ dioxydiamidoarsenobenzol dihydrochloride. = "606."

To it add 2 Na OH:



$\begin{matrix} OH \\ NH_2 \end{matrix} > C_6H_3 - As = As - C_6H_3 < \begin{matrix} OH \\ NH_2 \end{matrix}$

$\begin{matrix} H|Cl \\ OH|Na \end{matrix} \qquad \begin{matrix} H|Cl \\ OH|Na \end{matrix}$

"Atoxyl differs considerably from '606' since it is not potent except in *vivo,* as its action depends upon a reduction product, paraarsinophenylarsenoxide, and in the reduction the arsenic molecule becomes changed in such a way that all cannot be fixed, consequently people possessing a natural sensitiveness to arsenic might become poisoned by that portion which remained unfixed: and this is what actually happened. Further, several doses of atoxyl are required to one of '606.' Before the drug was put upon the market Ehrlich drew attention to this possibility, and showed it might be avoided by testing the patient's sensitiveness by means of either a Calmette or a von Pirquet reaction with the drug before use: and those giving a positive reaction regarded as unsuitable for the treatment." (McDonagh.) Owing to the difficulty of using a solution of "606" McDonagh suggested arsacetin: the more extended use of "606," however, has shown that this precaution is practically unnecessary.

It has been shown by a number of investigators that arsenic appears in the urine very quickly after the administration of "606" and its excretion continues for from fourteen to eighteen days. This period is shorter after the subcutaneous than after the intramuscular injection. Most of the arsenic is eliminated in the first three or four days.

CLINICAL RESULTS.

In passing many times through the wards at the Virchow Hospital I was impressed with the apparent well being of the patients and with the scarcity of active syphilitic lesions—these being present only in the recently admitted patients. The temperature charts were as a rule about normal; sometimes there was a rise of from 1 to 3 degrees Fahrenheit for a few days after the injection; rarely the temperature went higher, but even then it remained so for a very short time only. The pulse was usually quickened for a few days, but in the average patient remained below 95. Very high blood pressure is at present thought to contraindicate the use of "606."

Patients were seen with masses at the site of the injection, beneath the shoulder blade, varying in size from those of insignificance to those three inches in diameter and perhaps one or one and a half inches in thickness. Sloughing had occurred in a small percentage of patients, but did not appear to hinder the cure of the luetic affections. The necroses appear to be due to the destructive influence of the remedy at times and at others to simple infections. One case has been reported in which the necrosis developed or rather broke through the skin on the twenty-fourth day after the injection; neither germs nor arsenic could be found in the secretion from this particular case. Wechselmann is very particular with his technique in preparing "606" for injection and also thinks that none of the remedy should be on the needles through which it is injected, so he uses one needle, through which the medicine is drawn into the syringe and then injects it through two others, which are inserted about two inches apart. By using two needles, and by massage to spread the medicine over a large surface, the danger of sloughing is now quite small, provided the neutralization is accurate and the technique perfect. There is considerable variation in both the manner of preparing the injection as well as in the method and site of injecting it. It has been given subcutaneously, intravenously, and intramuscularly. The best results appear to follow the subcutaneous method, or the intravenous, followed in a week by the subcutaneous. (Neisser.) The absorption is slower when administered by the intramuscular route.

In preparing "606" for the subcutaneous injection Wechselmann uses the following method: To begin with, everything is sterilized in the operating room just as if an operation was to be performed, of course including the operator's hands and the site of the injection. The dioxydiamidoarsenobenzol is shaken out of its sealed glass ampoule into a sterilized agate mortar, where it is rubbed up with from ten to fifteen minims of ten per cent. caustic soda solution until it is all dissolved; next pure glacial acetic acid is added until the preparation is neutral. This throws down a yellow precipitate; a few cubic centimetres of distilled water is then added. In order to render the neutralization accurate—for upon this depends the relative freedom from pain—tests are made with pink and blue litmus paper, and one per cent. solution of caustic soda or one per cent. solution of glacial acetic acid added until the preparation is neutral or amphoteric. It is then placed in a sterile tube and centrifuged; the supernatant fluid is poured off and the precipitate mixed with five cubic centimetres of physiological salt solution. It is then drawn into a sterile Lüer syringe with one needle and injected through two other needles, all of 16 gauge, into the *subcutaneous space*—not into the skin nor deeper into the muscles. After gentle but thorough massage, to diffuse it well through the surrounding tissue, the punctures in the skin are sealed with collodion and then covered with gauze and adhesive plaster. The patient is placed in bed for three or four days, is given regular diet and is requested to drink rather freely of lithia or other water. No local applications are placed over the site of the injection to lessen the pain, for this is as a rule slight with the neutral emulsion. The patient is urged not to take any active or violent exercise for some time after the treatment, and also not to massage the indurated mass at the site of the injection nor to take hot baths (but tepid ones) until the hardness has disappeared. Some observers advise massage after several weeks. The time required for this mass to become thoroughly absorbed varies from a few to many weeks, but during this time gives practically no trouble. Painting the site of the injection with tincture of iodine without any washing affords satisfactory sterilization of the skin previous to the injection.

Junkermann has modified Alt's method of preparing "606" as follows: He mixes 6 c.c. of sterile water with the powder and after adding twenty or thirty glass beads shakes the mixture thoroughly. When completely dissolved he adds, drop by drop, a fifteen per cent. solution of caustic soda until the resulting precipitate is again dissolved and the solution clear. The beads are washed so as to lose none of the preparation. The product thus produced is said to be the soluble monophenate, weakly alkaline.

Kromayer advocates an emulsion in paraffin oil, the advantage of which is its permanency when protected from the light. The "606" is rubbed up with the paraffin oil so that 1 c.c. will contain 0.1 gramme of the remedy. Fractional doses from 0.1 to 0.2 gramme are given every other day. Little pain is produced by this method but Wechselmann thinks its action is too slow.

Schreiber strongly favors the intravenous injections which he prepares by adding from 10 to 20 c.c. of sterile water and shaking until clear. This is then brought to 100 c.c. with normal salt solution and for each 0.1 gramme of "606" he adds 0.7 c.c. of normal caustic soda solution. When the resulting precipitate is dissolved, from 150 to 250 c.c. of physiological salt solution is added.

Other observers use a larger quantity of salt solution, and Iverson neutralizes with one per cent. acetic acid.

Beneficial effects are noticeable within from twenty-four to forty-eight hours if the treatment is to be successful. Where a second dose is required Wechselmann advises that it be given about the third or fourth week after the first injection. Sometimes when the dose is too small the rash deepens in color before it disappears; this is known as the

Jarisch-Herxheimer reaction. It has also been observed after large doses. Should an eruption of this kind develop two or three weeks later it means the injection was unsuccessful and should be repeated.

Apparently the most resistent lesion of syphilis (except the congenital chronic interstitial keratitis) is the small recurrent syphilide. Wechselmann thinks the organisms are protected in certain localities, at times, by an obliterative endarteritis or some such process and the first dose of "606" kills the majority of the spirochætæ and also absorbs the pathological wall surrounding and protecting some of the germs so that the next injection can destroy the remainder of them. Fortunately, comparatively few patients so far have required a second injection.

Every one seems astonished at the feeling of well being experienced by the patients during the first few weeks after the injection and by the rapid gain in weight and strength. This could certainly not be the case if "606" were very poisonous to the tissues. Optic neuritis was the affection which was feared the greatest on account of the effect of atoxyl in patients oversensitive to arsenic; this fear with "606" seems ungrounded provided no methyl alcohol is used in preparing the remedy. It is stated that some optic trouble has followed in a few patients where methyl alcohol had been utilized in dissolving it for intravenous injections. The few reports of irritation or spasmodic affections of the bladder and rectum have also been traced to the same cause as they have not appeared when methyl alcohol was *not* used as a solvent. A number of women nearing the end of pregnancy have received injections of "606," and not in a single instance reported has normal delivery at full term been interfered with. The quantity of urine may be diminished and there often develops a slight albuminuria which lasts from a few days to a few weeks after the injection but appears to be of no consequence except to act as a warning to administer "606" with great care or not at all to patients with serious kidney or liver affections. A leucocytosis varying from 12,000 to 30,000 follows the injections for a few days, soon disappearing.

In rats about ten times the curative dose is required to produce a fatal result and many investigators are tending toward larger doses. At the present the average dose for an adult man is from 0.5 to 0.6 gramme, and for a woman about 0.4 gramme. The dose must vary with the lesions as well as with the strength and weight of the patient. In nervous patients the dose should be smaller. All observers call especial attention to the promptly curative action of "606" in malignant syphilis. It has been noted also that the larger the dose the more prompt is the healing. McDonagh asserts that a larger dose is required to heal an early chancre than to cure an extensive gummatous infiltration. This difference is probably due to the fact that in the early lesion there are fewer germs present and consequently less of antitoxine is produced. The reverse is true of infants who require very small doses for the endotoxines liberated from the enormous number of spirochætæ present may produce a fatal result.

Headache, dizziness, nausea, and vomiting sometimes occur after the intravenous injection, but rarely after the subcutaneous.

In something like 13,000 patients treated with "606" there have been about twelve deaths in adults. Only one or two of these, however, were apparently due to the remedy itself, but most of them showed serious organic lesions or were already in a moribund condition, and should not have received the treatment. A few deaths have been caused by imperfections in the technique that have already been overcome. The mortality was rather high at first in luetic infants until the danger was more fully realized and the dosage reduced or preliminary treatment given. It has been reported that "606" applied locally to chancres promotes prompt healing when this does not follow quickly the injection.

Nervous diseases which occur late as parasyphilitic affections and are not due to such lesions as gummata are apparently not benefited by "606." Beginning locomotor ataxia and beginning syphilitic insanity may be checked or cured by this remedy, but so far the results are not conclusive and we must wait for further trials before formulating a rule. If destruction of the nervous system has *already occurred* it would be foolish to expect such lesions to be repaired by any remedy. Ehrlich says that the use of "606" is contraindicated in far advanced lesions of the central nervous system. Wechselmann found that some of the symptoms of tabetics were improved in some patients; for example, the girdle sensation; the dull headache which had existed for years; very severe intercostal neuralgias; in one case weakness of the muscles of deglutition which had existed for a number of years and which produced difficulty in swallowing dry nourishment. Diminished sexual power was in one case so improved that foolishly daily intercourse was indulged in. Some patients have thought their gait improved.

All observers agree that, as a rule, the spirochætæ disappear in from twelve to forty-eight hours and that visible lesions heal with astounding rapidity. The size of the dose seems to have a special influence upon the promptness of the healing process. In case of failure one should at once think that perhaps the dose was too small, the strain of spirochætæ is immune to arsenic, or that local circulatory conditions did not favor the action of a remedy carried in the general circulation. Wright has long ago called attention to the importance of this point in vaccine therapy.

The Wassermann reaction generally becomes negative after from two to six weeks, but varies greatly as to time.

Pick says he has not seen a negative Wassermann reaction (after the administration of "606") change back to positive, even in those cases in which there was a recurrence of symptoms, or in those in which the symptoms did not wholly disappear. Other observers have seen the Wassermann reaction become positive again, but these cases are unusual where the cure seemed entirely successful at first.

The Wasserman reaction should be made as a preliminary to the injection always so as to check future observations in determining how successful the treatment has been. Certainly there will be internal organic lesions which may remain quiescent for a time and could only be detected by the Wassermann reaction and thus only could we know early when the dose should be repeated. While the Wassermann reaction is of great value it may at times be misleading, as a large number of killed spirochætæ might cause the reaction to be positive and yet the patient be well, or only a few germs might permit it to become negative and at a later date positive. Much care must be exercised before declaring patients cured, for until many years have elapsed our observations must, in a manner, be regarded as preliminary. It should also be needless to say that where there is any doubt as to the luetic nature of an affection the Wassermann reaction should be used to determine whether "606" should be administered or not. The remedy should not be given for diagnostic purposes.

I think I am entirely correct in the assertion when I state that all lesions due to active syphilitic processes are in most instances cured in a most startling manner, and that a large percentage of these cures are permanent. Chronic interstitial keratitis ocurring in hereditary syphilis is not benefited by "606," nor are late parasyphilitic affections. Patients having received this treatment should be observed at intervals for two or three years and forbidden to marry until not only the Wassermann reaction but also the "time test" has proved the cure to be permanent. After a few years of experience this rule probably can be changed entirely.

If space did not forbid, many interesting and astonishing histories might be recorded or copied from the now voluminous reports upon the results of "606." The following case reported by McDonagh may be taken as a fair example of the immediate and favorable results often seen and already duplicated thousands of times by many independent observers. "A male, aged forty-one years, was admitted to the Lock Hospital with a large ulcerating chancre of the prepuce, polyadenitis, sore throat, nocturnal headaches, a macular rash, and gonorrhœa. Wassermann reaction was positive. The patient received 0.45 gramme of '606,' and within forty-eight hours the headache had gone, the throat was normal, the rash was fading, and the chancre had begun to cicatrize. In five days the rash had completely disappeared, and within ten days the sore had not only healed, but the induration, which was so marked at first was scarcely palpable." The induration is often not so quick in disappearing, and enlargement of the lymphatic glands may also disappear slowly. Spietshoff has obtained good results in such indolent glandular enlargements by injecting 0.01 gramme of "606" directly into them. He has treated many patients with "606" with favorable results throughout. In a broken down gumma of the turbinate the purulent secretion had stopped in twenty-four hours, on the second day free breathing through the nose on the affected side was possible, on the third day the ulcer was healed and only a little infiltrate remained. The following case, reported by the same writer, is of interest not because such rapid results are usual, but rather because it shows how marvelous the effects sometimes are. The patient had a hard gland as large as a hen's egg just below the ear which dated back to the outbreak of secondary symptoms two months previously and had resisted all previous treatment. One hour after the injection of 0.6 gramme of "606" the patient became nauseated, five minutes later broke into a profuse perspiration and at the same time was seized with such severe pain in the gland beneath the ear that he could not move his head. After an hour the pain lessened and the gland began to grow smaller in such an astonishing manner that in six hours it was reduced to one third its former size and within twelve hours it was no larger than the other glands in the neck. Chronic syphilitic glossitis and leucoplakic patches upon the tongue, both of which are so persistent under ordinary antisyphilitic treatment, respond to injections of "606" in a magical manner. Glück reports a case of syphilitic arthritis complicated with periostitis of the tibia and gummata of the skin where not a trace of the trouble was left at the end of six days. Weschelmann has found the most severe and intractable osteocopic pains—sometimes of five years' standing—to disappear the second day after the injection.

The usefulness of "606" is not limited to syphilis but exhibits its action in such protozoon diseases as malaria, (especially the tertiary form) relapsing fever, tick fever, trypanosomiasis, frambœsia, fowl spirilloses, etc. The results usually seem just as startling in their promptness and thoroughness in these diseases as in syphilis. Bacterial diseases seem not to be influenced by it, although certain observers have thought that nonspecific ulcerations were caused to heal more rapidly after an injection of "606." Gonorrhœa in a syphilitic patient who has received an injection of "606" is not directly benefited by the treatment. The first experiments with this remedy were made upon chicken spirillosis and upon relapsing fever; it was found that beneficial results were quickly produced and the spirochætæ would disappear from the blood within twenty-four hours.

As might have been expected there is considerable bitterness of feeling over the manner in which the results of "606" have been exploited in the daily papers, some of the results appearing in the lay press before they were published in the medical journals, and already the committee of the Berlin Medical Association is attempting to stop such publications. Quacks, too, have been busy; in Bucharest one advertised widely that he had procured a supply of "606" and was prepared to administer it; after receiving large sums of money he was arrested and it was discovered that he never had had any of the remedy. Another has advertised that he will administer "606" as soon as it is placed on the market, and as patients are to receive the treatment in the order of their applications he has urged that they enter their names at once. This booking is doubtless *not without remuneration.*

Criticisms and reports of dangerous or fatal results have appeared in the lay press from time to time but when traced down were found to be of no practical value or significance, and merely emphasize the importance of the utmost care being exercised in its administration always recognizing the limitations and contraindications which have been insisted upon by Ehrlich and his coworkers. It has been stated that a number of greatly exaggerated reports has originated in certain well known continental bath resorts whose patrons are largely luetics.

At present there seems to be considerable uncertainty as to the exact time "606" will be placed upon the market. Owing to certain criticisms and also perhaps to some improvements in "606," "Ehrlich-Hata-Hy" (hyperideal), it is reported that Ehrlich wishes to have the remedy tested upon between 20,000 and 30,000 patients before he places it upon the market. One cannot blame him for this precaution for it seems quite likely that it will be greatly abused and misused by thoughtless or careless physicians and Ehrlich wishes its value firmly established before such results occur. It is also said that some difficulty has been experienced in manufacturing the remedy and that the first lot was unsatisfactory and was destroyed. This seems to indicate the correctness of his action when he patented "606" as undoubtedly its manufacture should be in the hands of those who understand it and who feel some responsibility concerning its quality and the results that follow its application.

My advice to physicians is not to grow impatient at the delay, but to study well in the meantime every phase of the situation so that perhaps harm may not be done by the misuse of "606" when it is available for general use. The patient, too, should be advised not to grow restive while waiting, for the experimental period is about over and better treatment may perhaps be available when all the points in the technique have been perfected and practised for awhile than were possible at first.

From what I have seen and what I have heard and what I have read, I am sure that, unless those who use "606" study well its effects, bieffects, limitations, and contraindications, harm will result from the heedless, and reckless administration of this wonderful remedy. It may well be likened to ether anæsthesia, which in the hands of competent and experienced physicians is practically free from danger, yet when used by careless, inexperienced men is not devoid of harmful and, perhaps, even fatal results.

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ATLANTA NATIONAL BANK BUILDING.

HOSPITAL DAY ADDRESS.*

By CHARLES W. BURR, M. D.,
Philadelphia,
Professor of Mental Diseases in the University of Pennsylvania.

When in a thoughtless moment I promised your chief, Dr. Estes, to speak to you to-day I did not stop to consider how difficult it is to find a subject suitable to discuss before a mixed audience of physicians, nurses, hospital managers, and ordinary people. I say ordinary people because you know that people who are not of our own tribe, whether we be of the clan of physicians or lawyers or clergymen or any other, or at least are not closely associated with us in our work, are always ordinary. They may be nice people and quite intelligent, but they are never, from our point of view, on quite the same high level as ourselves. I am not sure that it would have helped very much had I stopped to argue about Dr. Estes's request, because after a rather close acquaintance with him and a very careful psychological study of his character, extending over a period of not a few years, I have come to the conclusion that he is one of those men who usually get what they want. The blame is his, therefore, if the sermon I shall preach to you, the nurses who are being graduated, and to the older nurses who have come back to this celebration, and not to the outsiders in the audience, who may shut their ears just as if it were in very truth an official sermon and not listen if it does not interest them; I say the blame is Dr. Estes's, if the sermon is dull, flat, stale, and unprofitable. If it is a good sermon I shall take all the credit.

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*Delivered at St. Luke's Hospital, South Bethlehem, Pa., October 18, 1910.

I shall not waste your time with unctuous flattery of the excellence of your hospital, the skill of your chief surgeon, the fidelity of his assistants, the wisdom of the principal of your school and superintendent of the hospital, Miss Brown, nor the wise financial care and devotion to a great charity of your Board of Trustees. They have done well, excellently well; have carried to success a work well worth the doing and not easily to be accomplished, but they have done no more than their duty and duty needs no praise. I do, however, want to say a word parenthetically about the great usefulness of hospitals in small cities and towns. One of the things this hospital has to be proud of is that it was among the first to be founded in Pennsylvania outside of Philadelphia and Pittsburgh. When it was started I have no doubt there was the same opposition to it that until recently has met every proposition to found a hospital for the care of the poor in small centres of population. Indeed the opposition to such institutions is not yet wholly dead. Curiously enough the opposition has been and is from medical men and is based on the false idea that hospitals pauperize the working people if not indeed the well to do and even rich. There is admittedly some abuse of hospital charity, but the good done far overbalances it. I do not mean only the good done by these institutions in caring for the poor, but the good influence they have educationally on the doctors of the neighborhood. They are ever open postgraduate schools and they enable the doctors to do operations and treat patients whom they could not treat without the machinery and discipline of a well regulated hospital. The physicians working in them exert a tremendous intellectually stimulating influence on the younger men and the latter have opened to them opportunities to do clinical and pathological laboratory work which they otherwise would never get. It is scarcely an exaggeration to say that the physicians in a town possessing a hospital are almost always better and more skilled than those living far from one. A few men are of such strength of intellect that they will become skilled no matter how disadvantageous their surroundings, but most of us need all possible aids to study and must have our ambitions constantly aroused lest we fall into the pit of carelessness and ignorance of new knowledge. The ambitious, well trained, and intelligent young physicians are greatly helped, the drones and ill trained lose a few pennies. The real losers in a financial way, if in truth there is any loss, by the establishment of out of town hospitals are the physicians and surgeons in the large cities. City surgeons lose some fees for great operations they would have been called to do in the absence of a local hospital, and even neurologists are deprived of some opportunities to show their great skill which, as everyone knows, is greater than that of any other physicians.

To return to my subject I purpose to speak to you on certain of the causes of failure of nurses in their work. The percentage of failures among nurses is no higher than it is among working people in general, indeed I think it is rather smaller. because after all they are a picked body of women and those who are fundamentally unfit usually fall out before their training school course is over. I am speaking only of nurses who have had training in well equipped schools attached to hospitals. There are, however, some who, though they have intelligence enough successfully to do the mental work required in a training school and muscular strength enough to withstand the physical strain of their preparation, fail when they come to the real test of private nursing. I shall speak to you of some of the causes of their failure.

I shall say nothing of the technical side of a nurse's training, because you have had it well given to you and since you have survived the ordeal and the trial and battle and are here to-day to receive diplomas certifying that you have successfully fought, you must be well trained. Indeed, I may say that in general when nurses fail in their work after they leave the hospital it is not so much, not so often, because they have not been taught and do not know the technical side of their work as because they are lacking in tact and, less frequently. in the gentler side of their work, the feeling of humaneness. I do not mean by this that they fail because of moral defect. That is very rare notwithstanding the sensational statements that appeared in the newspapers a short time ago. Those statements had their origin in thoughtlessness and ignorance and a brutal disregard for the feelings of a large and respectable class of high grade women if indeed in nothing worse.

One cause of failure, then, not the most important, but still one which recent graduates sometimes show, is forgetfulness of the human aspect of their work and an undue magnification of technique and scientific matters. When Florence Nightingale went to the Crimea to succor the thousands of ill soldiers there the thought in her mind was humanity, not science. Her thought was to aid the sick, to help the individual man, not to increase knowledge. Now it seems to me that in recent years we have sometimes somewhat neglected this aspect of the matter and that occasionally the nurse becomes a cog in the machine of formal science rather than an aid to help the sick person. It may be that I lay rather too much emphasis on this cause of failure because in my own work human instincts and human feeling play such a large part both in the causation of disease and in therapeutics, but it seems to me that sometimes I have met nurses who were so highly professional that they neglected, in their work, the human element. They were usually very young and in a degree resembled those curious and interesting animals, the unlicked medical cubs, hospital internes, who usually turn out most excellent doctors, but who, especially if they are intellectually bright and ambitious, pass through a period of pseudoscientific savagery. Sometimes they put on a mask of brusquerie thinking it is manly. Do not misunderstand me. I do not wish you to think that I am one of those silly people who, to use their own language, "do not think much of science." I am nothing of the sort, but I do believe a nurse's first duty is to help the sick and not to deal with medical or scientific problems.

I think the most frequent cause of failure in nursing is lack of tact, which in itself depends upon ignorance of human nature plus a contempt for such knowledge and forgetfulness of the fact that on it depends ability to manage people. Now human nature is, as has often been said, a curious thing. It is straight and crooked, hard and soft, intellectual and emotional, sometimes hard to stoniness and then in the same person soft as jelly. It is selfish and unselfish, strong and weak, and in the same person are often present very contradictory qualities. It is a paradox, and unless you understand the paradox and manage it you will fail. Sick human nature is of course even queerer than healthy human nature. Often during ill health the balance wheel of control does not work at all and the safety valve of the emotions follows no law. In practical life the families of patients occasionally are, pardon my being so impolite as to say it, unmitigated nuisances. I am sometimes, but not always, sure that if the families would only go away and live on desert islands away from telephones and telegraphs and post offices and leave the patient entirely in the hands of physician and nurse the recovery would be much quicker. The problem of managing families is most difficult for a nurse. One of the most important elements in success is to keep on good terms with the cook. She is a very important person and the comic papers are not wholly wrong in picturing her as a domestic tyrant. Also she is, or at least the family hope she will be, a permanent fixture while you are, at least the family hope you will be, only a temporary necessity. The nurse who creates friction among the servants is useless.

Another error nurses make is to assume an air of superiority toward the family. It is true that you will have to deal with a few people who are very hard to get along with. There are still ill bred people in the world and there are others who want to be kind but do not know how. Never forget that you are in the house not as a welcome guest and friend, but on account of a sad necessity and as far as possible efface yourself.

One fault, and I think it almost the greatest a nurse can commit, is talking about a patient. Be sure to keep a bridle on your tongue. You will see much and hear much you should bury in the oblivion of forgetfulness. The ability to forget is of great use. You will see, you cannot help but see, the skeleton in many families in all its nakedness. You will learn the horrible details of many scandals. You will see families rent asunder by dissensions. Sometimes the parties to the quarreling will want to drag you into it, but beware; do not take sides, and if possible behave as if you did not know that trouble existed. You will see virtue suffer and vice prosper. You must forget all and never speak of it to anyone. Never let that worst of devils which possesses man, the devil of the wagging tongue, ever possess you, or you will do much evil and no good. All your work, however, will not be so sad as this. You will meet many kind and sensible people and many who carry their burdens without noise, but quietly, and find time also to help others. All things considered you will find far more in your work to make you happy than to make you sad.

I have spoken seriously instead of merely saying the soft nothings usually said at graduations not because I wish to send you to your work in the world with any doubts about your ability to succeed, but because we all, physicians quite as much as nurses, are liable to fall into these errors of conduct, and if warned beforehand may avoid much trouble to others and ourselves. I have no doubt that after the training you have had and the sane and wise environment by which you have been surrounded you will do well.

1327 SPRUCE STREET.

SOME REMARKS ON THE DIFFERENTIAL DIAGNOSIS OF TYPHOID FEVER.*

By P. H. Markley, M. D.,
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Typhoid fever presents no pathognomonic symptoms, yet there are few general diseases, the diagnosis of which, in most instances, is so certain, while conversely, in exceptional cases, there is no disease in which the diagnosis may be more doubtful and uncertain: for as has been truthfully said: "There is no one symptom, there are no two or three symptoms, which in themselves are characteristic of the disease, there is no one symptom, there are no two or three symptoms, usually occurring in the disease, which may not be absent during its entire course." Thus wrote Bartlett, in 1842, and we must practically admit that this statement is as true to-day as when written sixty-eight years ago, though the advancement in our knowledge of disease, made during that time, has been marvellous.

It further indicates that irregular typhoid was recognized in those days, and that it is doubtful, as some writers contend, that the disease has, in recent years, become more atypical. Examples of these irregular cases are constantly encountered, and present difficulties in diagnosis which, clinically at least, may be insurmountable, and in not a few instances defy even the bacteriologist, and are solved only by the autopsy; the reverse is also true, many diseases being incorrectly diagnosticated as typhoid fever, possibly more often the latter, so that the errors of commission may be said to be greater than are those of omission. It is my intention to point out what appear to be the chief points of practical value in a few illustrative cases that have come under my observation.

Typhoid fever is perhaps more often confounded with tuberculosis than with any other disease, especially with acute miliary, tuberculous peritonitis, and with those cases of profound toxæmia sometimes seen in cases of pulmonary tuberculosis. Of these the acute miliary is undoubtedly the most confusing.

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*Read at the Camden Medical Association, held at Camden, N. J., November 1, 1910.

Loomis, in his work on *Medical Practice*, regarding the differentiation, says: "More than once have patients in the Bellevue Hospital, with the diagnosis of typhoid fever, presented, at the post mortem examination, the characteristic lesions of acute tuberculosis. If, therefore, patients with acute tuberculosis, may go through a large general hospital, under the observation of diagnosticians—who certainly are not men of inferior ability—and be supposed to have typhoid fever, there evidently is great danger of a mistake of diagnosis." And Osler, in an article written a few years ago, said: "The diagnosis of typhoid fever from acute tuberculosis trips us all at intervals, and I may say that I am feeling sore from a fall over it, not ten days ago." Subsequently, in a clinical lecture given before the medical class of Johns Hopkins University, referring to a case in which a tentative diagnosis of typhoid fever had been made, he said: "We were severely censured by the faculty for having regarded this case at the outset as one of typhoid fever; this case illustrates a serious clinical difficulty which you will find hard to meet." And so we do, though in some instances the difficulties are not met, for many fatal cases do not come to autopsy, would that there were more, for much is to be learned on the post mortem table that cannot be definitely determined by other means.

CASE I. The first case to which I desire to call attention is that of an Italian male, aged twenty-four, unmarried, who was admitted to the wards of Cooper Hospital, in October, 1907, with a diagnosis of typhoid fever. His occupation was that of a laborer, and he was said to have been working hard for some time prior to his illness, which began four weeks before his admission with chilly sensations and general malaise. During the first week he had an attack of epistaxis, and was thought to have had considerable fever at the time of taking to bed, which was at the end of a week, and three weeks before his admission. During these three weeks his fever was continuous and high, accompanied with periodical outbreaks of active delirium requiring restraint. Further than this no history could be obtained. At the time of his admission his temperature was 104° F.: respirations, 34; and pulse, 128; slight cough, no diarrhœa, semistupor, alternating with wild delirium. A few rose spots were detected upon the abdomen and back, and he was at times cyanotic. The spleen was perceptibly enlarged and could be readily outlined on account of the flat scaphoid abdomen. The leucocyte count was 7,000, and a negative Widal reaction was obtained. Examination of the chest developed a localized area of impaired resonance, with tubular breathing at the right apex, other than over this circumscribed area; the percussion note was slightly over resonant, and small mucous râles were present throughout the chest. The temperature continued high, with but slight remissions, until the time of his death, which occurred on the fifth day after his admission.

Though this case was studied carefully in all the details at our command, and acute tuberculosis suspected, yet the diagnosis remained in doubt until cleared by the autopsy, which showed the lungs, liver, intestines, and mesentery thickly studded with miliary tubercles, as no doubt were the remaining organs.

The diagnosis of typhoid fever was considered doubtful, because of, first, his appearance, he did not have the peculiar facies of typhoid which, though difficult to describe, yet is quite characteristic. Many practitioners could pick from the wards the typhoids, at least the typical cases, by observing this peculiar physiognomy, without reference to other symptoms. The cyanosis, due no doubt to the diffused irritation of the bronchia, is frequently seen in tuberculosis, and was thought to be of some importance, though in exceptional cases it may arise from severe bronchitis accompanying typhoid fever. The epistaxis, while suggestive of typhoid fever, yet did not preclude a diagnosis of tuberculosis, as it sometimes occurs in that disease, while its significance as diagnostic of typhoid is doubtless overestimated, it occurring in but eighteen per cent. of 700 cases under observation at the Johns Hopkins Hospital; and an observation of 717 cases at the Montreal General Hospital showed the same percentage. The condition at the right apex was not consistent with typhoid, though the possibility of its being an old lesion, and incidental rather than essential to the present condition, was to be considered. The diffused mucous râles were not inconsistent with a diagnosis of typhoid, due to the accompanying bronchitis, though tubular breathing does not occur in typhoid, except when complicated by a condition of hypostasis, though puerile breathing is frequent.

The termination of the case would suggest that the consolidated area at the apex was an unencapsulated tuberculous deposit, from which the general condition arose, as acute tuberculosis is said to bear the same relationship to the primary lesion, as pyæmia does to a focus of suppuration. The presence of the retracted, or so called scaphoid abdomen, according to Leube, practically precludes a diagnosis of typhoid, though he concedes its possibility; personally I do not recall having seen it, and its presence in this case was considered to be highly confirmatory of tuberculosis, especially when taken in connection with the other symptoms, for a symptom which in itself possesses little or no value, may become very significant when conjoined with others. What of the rose rash? It was present. It is highly significant of typhoid fever, being by some regarded as almost pathognomonic, according to Osler it is present in about ninety per cent. of cases, and by him regarded as the most valuable single sign. All of which is true. It is also true, that the rose rash, to be of value as a diagnostic sign of typhoid fever, must be typical. Typical both as to its appearance and its course; for it is well known that in any infection a rose rash closely resembling the typhoid rash may be present, but to be of importance it must pursue a definite cycle; that is, coming out in successive crops, each lasting from three to four days then fading, to be succeeded by a new crop. When conforming to this type it is absolutely peculiar to typhoid fever, and becomes of great value. As the rash accompanying the infections is more or less permanent, at least does not pursue any definite cycle, so that while it was present in this case, we unfortunately had no knowledge of its character during the entire illness. In some cases of typhoid the rash may be so abundant as to cover the entire trunk and even the extremities, and I recall having seen a case a few years ago in which the rash was so profuse as to suggest the presence of one of the exanthemata.

The weight of clinical evidence favoring a diagnosis of tuberculosis, the result of the Widal test was awaited with a great deal of interest, and when returned negative we felt that the diagnosis was clinched, though in exceptional cases it is absent in typhoid, and miliary tuberculosis may give a positive. While it cannot therefore be considered pathognomonic, yet it is entitled to very great respect, being positive in about ninety per cent. of typhoid cases.

When this agglutination test was first suggested by Widal in 1894 and perfected by Gruber in 1896, for several years following, the profession was very sceptical regarding its practical value, and I can recall a case of suspected typhoid seen in the latter part of 1900 with a prominent specialist who unhesitatingly announced that he had no confidence whatever in its diagnostic importance, and took apparent delight in deriding it, enumerating the various diseases, other than typhoid fever, in which he had obtained positive reactions. Dr. Arthur V. Meigs, of the Pennsylvania Hospital, writing in 1899, said: "I have concluded after careful study that as a diagnostic aid, the Widal test is useless. This conclusion has been forced upon me, by the fact that the test has often indicated the existence of typhoid fever in patients who manifestly did not have it, and on the other hand the test has failed to confirm the clinical evidence of the presence of typhoid fever." He then goes on to cite a case of acute miliary tuberculosis in which a positive Widal reaction was obtained on two occasions. Similar opinions were then held by many practitioners, though since that time experience demonstrates more and more its reliability. Unfortunately the Widal test is not available in the early stage of typhoid fever, and this delay in its appearance very much lessens its practical value, it rarely being obtained before the tenth day, and may be delayed to a much later period. It may also be at times very confusing, as a positive reaction may be obtained years after an attack. Here the possibility of a recurrent attack should be considered.

The diazo reaction is of but little value in differentiating typhoid fever, being present in so many febrile conditions. Other bacteriological methods, such as the detection of bacilli in the blood, stools, urine, etc., are not available by the average practitioner, as the detection of the typhoid bacillus requires the careful technique of a skilled bacteriologist. Nor is the leucocyte count of value in differentiating typhoid fever from tuberculosis, as leucocytosis is not present in either disease; a differential count, however, may be of some value, as in typhoid there is an increase of the lymphocytes, constituting a relative lymphocytosis which is not present in tuberculosis.

Differing in some essential features is the following case, which I saw a short time ago:

Case II. Female, American, aged thirty, married, no children, had been in bed three weeks prior to the time that I saw her. As she was a resident of a distant State and taken ill while visiting in this locality but a very meagre history had been obtained. It was stated that she had been in good health until the time of her present attack, which began with a chill followed by epistaxis the following day. At the end of twenty-four hours she was improved, and did not go to bed until she had a recurrence of the chill one week later. This was followed by a high fever which was continuous, though with decided morning remissions. Her physician stated that he had been in constant attendance for three weeks, and that during that time she had several slight chills, and more or less delirium, and persistent insomnia. She also had several attacks of vomiting which was attributed to her inability to digest milk. At the time I saw her the pulse was 120, though her physician assured me that at no time before had it been above 104, respirations were 36, temperature, by rectum, 104.2° F. She was semicomatose and unable to answer questions intelligently, her abdomen was much distended, and possibly on that account we were unable to make out any splenic enlargement, no spots could be detected and it was stated that there had not been any. She had no cough. Bowels were constipated. Conjunctiva was decidedly yellow, and the skin slightly jaundiced. No blood examination for a Widal reaction had been made, her physician stating that he felt so certain that it was a case of typhoid fever that he thought it unnecessary, nor did he consider the absence of rose spots of any significance; the recurrent attacks of chills were attributed to a mixed infection with malaria, and for the control of which she had been given large doses of quinine. Examination of the chest developed an area of consolidation at the right base, tubular breathing with mucous râles diffused over the whole area.

Some doubts were expressed regarding the diagnosis, and it was suggested that a blood examination be made for the presence of the Widal reaction, and if possible, to obtain a more complete history of the case up to the time of the present attack. The bacteriological report was negative, no Widal reaction being present, and the information obtained that about one year prior she had been under the care of a physician for a lung condition supposed to be tuberculous. Her condition remained practically unchanged from the time I saw her until the time of her death which occurred four days later. No autopsy could be obtained but there seems to be but little doubt as to its having been a case of acute tuberculosis of the pulmonary form.

In this case, as in the former, the lung condition was manifest, the importance in either case being largely dependent upon the time of its development, as, if found to have been preexisting, unless an old and latent lesion, would have been largely against a diagnosis of typhoid, though congestion of the lungs might occur as a complication. By this we are reminded of the importance of the anamnesis, for but few diseases can be satisfactorily diagnosticated without a knowledge of the patient's family, personal, and medical history, and also a clear understanding of the mode of onset and early symptoms. Emphasizing the importance of these matters of detail, a prominent specialist has recently written that in the diagnosis of tuberculosis he relied more upon the history than he did on the physical signs, whether or not the presence of a prodromal period, the early headache, which is perhaps the most constant early symptom, the dilated pupils, the slow pulse, entirely disproportionate to the height of the temperature were important information, and went a long way toward framing a diagnosis.

Enlargement of the spleen is of but little value in differentiation, as it may be found present in any infectious process, and is as constantly present in acute tuberculosis as in typhoid, though in the latter is generally more pronounced. The slow pulse, never having been above 104° F. until the near approach of death, was suggestive of typhoid, though the possibility of its having been due to tuberculous meningeal involvement was to be considered. So, too, the abdominal distention, differing from Case I, in which the abdomen was retracted, might too, be deceptive, and have been due to tuberculous involvement of the peritonæum. The importance of the epistaxis was largely counterbalanced by the absence of the rose spots; and the occurrence of chills either at the onset, which is very rare, or during the course of the disease, which may be said to never occur during an attack of typhoid, except in the presence of complications, was distinctly against a diagnosis of typhoid fever; the possibility of their being due to a malarial complication was very remote indeed, as it is now well known that typhoid and malaria are rarely coexistent and the term "typhomalarial fever" is deceptive and should no longer be used.

The following case is of interest from the fact that the symptoms suggestive of tuberculosis were predominant, and a diagnosis made in accord, though proving to have been a case of typhoid fever:

Case III. An Italian female, aged twelve years, was admitted to the wards of Cooper Hospital, in the fall of 1908 She was said to have had a temperature ranging from 100° to 103° F., for three weeks prior to admission, during which time she was confined to bed. Prior to her illness she had been attending school, and an indistinct history of a short prodromal period was obtained. After her admission her temperature continued to range from 102° to 103°F., accompanied with periodical outbreaks of active delirium; her pulse fluctuated from 110 to 130; respirations, 38. There was a moderate diarrhœa and some slight cough. Examination of chest revealed the presence of diffused mucous râles throughout both lungs, puerile, but not tubular breathing, nor other evidence of consolidation could be detected. The abdomen was flat and retracted, the spleen could not be outlined, and there were no rose spots present. The diagnosis of typhoid fever was considered doubtful from the fact of the rise of temperature running into the fourth week and without any marked remissions, and the slight effect of hydrotherapy at this stage, the periodical character of the delirium, the absence of rose spots, and the flat abdomen. The lung condition was practically negative, at least so far as differentiation was concerned, as it was entirely consistent with typhoid fever. Not infrequently acute miliary tuberculosis presents no more marked localized lung condition, particularly that character of the disease described as the typhoid form. The positive Widal reaction was largely confirmatory, and in this case conclusive as the child soon began to improve and made an uneventful recovery, though the fever kept up for about six weeks.

As is well known, in the average case of typhoid fever running into the third week and longer, the temperature becomes distinctly remittent, so much so that it is described as the period of "steep curves." At this stage cold sponges are generally very effective in reducing the temperature, whereas in the first week of typhoid fever they have but little if any effect. The long continuation of high temperature is remarkable, especially in a child, as the duration of typhoid fever in children is much shorter, and as a rule much milder than in adults. In some cases I have known convalescence to be well established by the tenth day. Nor is the duration of typhoid in adults as long as is generally supposed, as in a series of 400 cases under observation at the Philadelphia General Hospital the average duration was eighteen days. Some authorities state that the fever never continues beyond the fourth week, except when due to some complication; I doubt, however, the correctness of this statement, as I can recall several cases extending beyond this period without any, at least manifest, complication, nor did the subsequent course indicate a reinfection.

The delirium of typhoid fever is, as a rule, of the muttering type, maniacal outbreaks being rare, while such outbreaks are not uncommon in acute tuberculosis. In those cases of typhoid fever without pronounced delirium there is always a condition of mental hebetude, which is so constant that in a suspected case, if the mind is clear and active, a diagnosis of typhoid fever is extremely improbable. Personally I cannot recall a single case, even of the so called mild or ambulant type, in which more or less mental torpor was not manifest.

The state of the bowels is of but little value in differentiation, as there are about as many cases of typhoid accompanied with constipation, as there are cases with diarrhœa, according to statistics, twenty-five per cent. with diarrhœa, and twenty-one per cent. with constipation. My personal observation has been that the greater number of patients have constipation.

As before suggested, in the typhoid form of acute tuberculosis the lung condition may not be pronounced, regarding which Osler says: "The pulmonary symptoms may be very slight, usually bronchitis exists, but is not more severe than is common in typhoid fever."

The differentiation of typhoid fever from appendicitis is often attended with considerable difficulty, of which Deaver speaks as follows: "Typhoid fever and appendicitis are frequently sources of diagnostic perplexity, so much so, indeed, that upon more than one occasion I have seen the surgeon forced to defer operation in appendicitis because the opinion of the majority of the medical attendants was opposed to such a procedure, they holding the case to be one of typhoid fever."

In this connection the following cases seem to be worthy of mention, the first occurring in my practice in 1893:

Case IV. H. M, aged five years, had an attack of expistaxis seven days prior to my being called, which a few days later was followed by a sharp attack of abdominal pain. When seen the child had a temperature of 100° F., which continued to rise each day, and on the fifth day registered 103° F., some headache was complained of, though the mental condition remained clear. The spleen was somewhat enlarged; and on the abdomen which was tympanitic, were noticed several rose colored spots. The region of the right iliac fossa was distinctly tender. On questioning the mother it developed that the child had complained of slight attacks of abdominal pain for several weeks, not continuously nor severe but at infrequent intervals. With this fact in mind and in the absence of mental symptoms I favored a diagnosis of appendicitis. At this time a prominent specialist saw the child with me and favored a diagnosis of typhoid fever, not being entirely satisfied, a second consultant was called, and as he favored a diagnosis of appendicitis, the abdomen was opened the following day and an abscessed appendix removed.

Case V. The other case to which I referred was that of an unmarried female, aged twenty-two years. After a few days of slight indisposition she was taken ill with an attack of vomiting, followed by distinct soreness and distention of the abdomen, the soreness being most pronounced in the right iliac region. At the time I saw her, the second day of her illness, the temperature was 101° F.; pulse, 100; respirations, 24; her only complaint being the abdominal soreness. Her case had been diagnosticated as appendicitis and the advisability of an operation was being considered. On examination, the abdomen was found to be much distended with distinct soreness accompanied with some, though not marked, rigidity; the spleen was enlarged, and could be outlined. Though there had been no delirium, the mental condition was not acute, and the physiognomy was suggestive of typhoid fever. The blood examination failed to show either a leucocytosis or the presence of the Widal reaction. One week later, however, a positive Widal was obtained, and she passed through a moderately severe attack of typhoid fever.

In reviewing these two cases one is impressed with the vast importance and value of the bacteriological aid in diagnosis, in the latter case the fact of there being no leucocytosis present, practically precluded a diagnosis of appendicitis, and this followed by a positive Widal reaction, particularly after the first having been negative, presumably because of the early stage of the disease at which it was taken, made the diagnosis of typhoid fever certain, whereas at the time of the occurrence of the first case we knew nothing of these valuable methods, being obliged to make the diagnosis from the clinical symptoms, which, to-day, so dependent are we upon the laboratory, would be deemed wellnigh impossible. For to again refer to Bartlett the presence of two or three symptoms in the one case, nor the absence of two or three symptoms in the other, did not make the diagnosis by any means certain.

Much more could be said with reference to this interesting and important subject. But other questions which I had very much to refer to would far exceed the limits of the present paper and will necessarily have to be omitted.

Before concluding, however, I wish to briefly mention a few common conditions, other than those already referred to, with which typhoid fever is frequently confounded. Meningitis may closely simulate typhoid. I can recall three such cases, the details of which would be of interest did time permit, two of them proved to have been typhoid, the other was a case of uræmic poisoning. The stiff neck, retracted head, delirium, and increased reflexes were present, though Kernig's sign was absent, which constitutes an important diagnostic feature. Head symptoms suggestive of meningitis may occur in any infection, due to the action of the toxines on the nerve centres. This condition is known in medical nomenclature as meningismus, and not infrequently occurs during an attack of typhoid fever, and often regarded as a distinct meningitis, though when it is considered that a true meningitis is one of the rarest complications of typhoid, occurring in less than 0.5 per cent. of cases, it renders its existence doubtful. Typhoid infection becoming localized in the lungs, simultaneously, or perhaps preceding the intestinal involvement, sometimes occurs. I have seen two such cases, one occurring in a child the other in an adult, each began with the ordinary symptoms of a croupous pneumonia, and in each a diagnosis of pneumonia was promptly made. The intestinal symptoms were not manifest until the end of a week. No crisis was reached, a positive Widal reaction was obtained in each case, and after the end of the first week they pursued a typical typhoid course. This is the form of typhoid described by the Germans as pneumotyphoid, and is not to be confounded with those cases of typhoid in which pneumonia occurs during its course as a complication.

The differentiation of these cases of pneumotyphoid, during the first week, at least, seems to be impossible, with reference to which Osler remarks: "I have brought such a case before the class one week as a typical pneumonia, and a fortnight later shown the case as one undoubtedly of typhoid fever."

Septichæmia, in its various forms, is another stumbling block. An illustration of this statement I saw a short time ago in the case of a young girl, eighteen years of age, in which a diagnosis of typhoid fever had been made, but which proved to have been a case of septic endocarditis. The dictum announced by Cabot, that all causes of continued fever are either typhoid, septichæmia, or tuberculosis, is ofttimes of value in differentiating.

How often do we hear the statement, that such and such a one was beginning with typhoid fever, but the doctor "broke it up," which, when properly interpreted, means that the doctor has taken the easiest way out of a mistaken diagnosis.

Such errors are in most instances due to the attempt to make an early diagnosis, in order to satisfy the anxious and insistent relatives. It would be far better in a suspected case to frankly admit that a positive diagnosis cannot be made until the case has been under observation for at least one week. Such a course, if properly explained, will be no reflection upon one's diagnostic ability, and with intelligent, fair minded people, will strengthen their confidence. By adopting this procedure fewer mistakes will be made, and we will hear less of pseudo-abortive cases.

515 COOPER STREET.

THE PRESENT STATUS OF THE PSYCHONEUROSES AND OF PSYCHOTHERAPY.

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Two cross movements have played across the field of neurology in the last decade having ostensibly a common purpose, but so widely divorced in their methods that great confusion and suspicion arose thereby. As there is no class of sick more helpless or more influenceable than the psychoneurotic, it was natural that both scientific medicine and cults whose object was to attract the more suggestible members of the human family should interest themselves in them. So it came about that mysticists and over night psychologists in our own ranks and out of it have reared on top of a few truisms as old and as commonplace as is man a structure of psychotherapy whose woof and fabric is interlaced with imperfections. On the other hand, many scientific attempts to arrive at an exact conception of the nature and treatment of these disease states has resulted in almost equal confusion. There is at present a little clarification, although the smug complacency of some in their conception and treatment of such individuals is certainly not justifiable from an analysis of their premises, let alone their results. The first essential in dealing with a subject is to arrive at a proper conception of the extent and limitations of our knowledge and we usher ourselves immediately into debatable ground.

Inexactitude of our terms and definitions. We cannot treat of a subject without every one taking a similar meaning from the terms used. For this reason certain words are in common usage which are not scientifically definable, but which are a result of this desire for understanding. We are wont, therefore, to speak of a neurosis, implying thereby an expression of an inharmonious acting nervous system whose pathology is not understood, or which without any pathological or chemical basis being in question is considered merely as a functional disease as opposed to an organic one in which there is a pathological basis. As well as I can survey the matter, we should not use the expression functional nervous disease, unless we mean thereby a curable nervous disease, and the use of the term has resulted in more harm than good, more so than that frequently used as cloak for our ignorance idiopathic, which likewise could be absolutely dropped from medical nomenclature. Going from the assumption that there can be a functional nervous disease, we interpret end results as the expression of an actual diseased state and therefore stultify and narrow our vision and retard the development of actual conditions. Chorea, for instance, was regarded as a functional nervous disease, though choreatic movements were no more the disease itself than is dropsy in cardiac or nephritic lesions. Likewise the term neurosis, although a convenient peg to hold to, does not express exactly what we mean. If the symptom or complex of symptoms we are referring to, is local only, it is not a neurosis in any sense of the word, but due to some physiological or pathological deviation from the normal. If we consider it the local expression of a badly acting nervous system and call it a psychoneurosis we are still merely using a word for convenience without any exactitude being more than implied. A neurosis of the stomach, for instance, is either some local gastric disease not understood or diagnosticated, or is the local expression of an abnormal mental state. Genitourinary specialists likewise recognize a prostatic neurosis, speaking thus indiscriminately of a prostatic irritability due to a mild inflammatory state or of the local expression of an abnormal mind. In neither case is it truly a neurosis. I am well aware that many psychologists even interpret mental processes in neural terms as expressive of psychological functioning, memory for instance as an after affect of early stimulations or consciousness as being merely cerebral activity, etc., and to those who think this way, the word psychoneurosis certainly and neurosis perhaps have their justification. These states are however so different from physical diseases, can occur associated with any physical disease, present so many intermediate types between so called neurasthenia and hysteria that I believe that Sommer's psychogenia is the best word coined to describe these sufferers.

There is no question that the too common belief that hysteria can be a localized neurosis has given rise to many ill advised treatments and harmed physicians with the laity by failure to relieve. Would not such a word as *psychogenia* help to fix the real status in every one's mind? We could then reserve for hysteria the picture of definite symptoms after shock or accident, etc., such as Dana contends for as the real hysteria. Because of the wrong conception of this term, and of that overused one, neurasthenia, local measures were employed and often successful without even the physician recognizing it was his personality, his suggestion or persuasion, his often to him, unknown use of psychotherapy which influenced the patient, and that it was an abnormally thinking and feeling mind he was testing.

What Is Neurasthenia? Most chronic invalids were formerly thought to be sufferers from neurasthenia. Every physician not able to diagnosticate his patient's malady got the habit of calling him a neurasthenic, and thus this term like neurosis stultified and narrowed the horizon of the medical profession. Omitting the few who are sufferers from mere physiological exhaustion from temporary overuse of their energies and for whom ordinary rest is necessary as well as sufficient for betterment, or likewise those suffering or recovering from some definite exhausting disease and whose fatigue and irritability are also physiological results, we have no other patients who can properly speaking be classed under neurasthenia if we look upon it as a dynamic disease. Those individuals who are constitutionally tired, who are easily overworked, who cannot get up energy, have numerous anatomic stigmata of degeneration and present many physiological deviations from the normal, such as small calibred bloodvessels or deficient acting kidneys or visceral ptoses and their disease is not of the nervous system any more than it is of the other organs of the body. Whether these present mental phenomena or not is begging the question inasmuch as we must recognize them as constitutionally abnormal from birth and therefore degenerative and regard if present the mental phenomena in the same way as we do the physiological. So it has come to be recognized that the neurasthenic state is not so much a disease as a type, and that the symptoms *per se* must be interpreted more broadly than formerly: following Janet (1), as psychasthenia if one wishes to use this term, when they present obsessions, fixed ideas, seizures, and crises of a psycholeptic type or as evidence of an incipient psychosis; manic depressive insanity, or dementia præcox, realizing that all have a similar basis of improper development differing only in symptoms presented and that these can only by close psychologic analysis be understood and interpreted.

Hartenberg (2) expresses practically the same difficulty of separating the physical and psychic when in his work on neurasthenia he defines neurasthenia as a mental depression due to, a want of nervous tension, a diminution of the activity of the nervous cell, and adds that the primary condition is *le trouble d'activité cellulaire diffuse* in distinction from hysteria which Hartenberg calls a *névrose psychique.* Anxiety neurosis he contends is a primary psychic neurosis, a primary emotional disease, and psychasthenia is a constitutional defect of the brain, a neurasthenia of the degenerate.

Hartenberg's views reveal the difficulties encountered in attempting to retain our old conceptions, merely modifying them to suit new analyses, for if neurasthenia is primarily somatic and a fatigue neurosis, the psychic symptoms should certainly not be the most important as they are to him as well as similar writers.

Donley (3) contributed a very striking article upon the necessity of considering neurasthenia from a psychic standpoint, but unfortunately commenced from the hypothesis that it was a "disintegrated personality, different in degree only from other types of dissociated consciousness"—a premise which he fails to prove. For it is idle for practical medicine at any rate to define a disease type in terms of mental mechanism, which are not explainable. If Janet's conception (4) of a lowering of psychological tension first occurs, followed by what Prince (5) styles an association neurosis from the automatic activity of the restricted elements of personal consciousness, neurasthenia is a partial disintegration of personality, but these interpretations remain to be proved. The same criticism can be made of the different theories concerning hysteria which we take up later.

Nature of hysteria:—Our ideas of hysteria are likewise being modified and broadened. We have come to realize that Charcot's carefully reared symptomatology was an artificial one due to suggestion, and that more important than all symptoms is a proper comprehension of the psychological processes in play. Steyerthal's recent monograph in which he attempts to tear down entirely the conception of hysteria as a disease and concludes that all actual hysteric phenomena are signs of degeneration is certainly, however, offering us a crust for a loaf of bread.

What is degeneration? Degeneration is a word much used, but as no one has ever exactly defined it, it cannot be made to cover our conception of the symptoms of a disease. What distinctions can be drawn between the deviates (Walton), the desiquilibres (Magnan), and the degenerate? Does it imply a biological reaction of the race or does it pertain to the individual himself? The stigmata of degeneration are manifestly not hysteria and if we ally ourselves to Morel's followers with his series of degenerations from generation to generation, we likewise cannot lay claim to more than a row of facts which do not show what degeneration is. A definite temperamental state, the hysteric character, marks the hysteric, but this is not degeneration.

Freud's hysteria theory:—Several occurrences more or less perverse have arisen in the life of a child. Puberty comes—not physiological but psychological puberty—and with the development of imagination and phantasy at this period, there is developed around these early sexual pictures emotional complexes which continues to exist "coconsciously" and like ulcers keep festering in the individual's psychic life and cannot be united with the remaining content of their consciousness. Being constantly suppressed because of shame and self reproach the inner conflict goes on until hysteric symptoms develop as a result. These affect memories are gradually brought to play upon a certain person resulting in an extreme inner conflict which is the predisposing factor for the real disease (6). It is nothing, therefore, but an abnormal sexual phase. It is evident to everyone that such sexual experiences dating from childhood do frequently occur, but mostly without evil results, and only with certain psychopathic individuals, does it come to hysteria, obsessions, and an *angst* neurosis, and even here it is not always sexual experiences and their suppression, but another suppressed complex, other inner conflicts which are the bête noir. (Näcke, *Neurologisches Centralblatt,* July, 1910, p. 675.) I accept Freud's doctrines (7) as having given impetus to a closer analysis of the intrapsychic life of our patient, and I have often been helped in my analysis of a patient's makeup thereby, but I have not therapeutically always been successful in this way. Perhaps not being sympathetic with the sexual ætiology, I am not suggesting or influencing strongly enough or going deeply enough to the roots of the matter as Freudinians claim.

The importance given to dreams by Freud (8) has proved of great value in our analysis of psychoneurotic patients. According to Freud dreams are normal hallucinatory presentations of repressed complexes, the realization by our unconscious minds of our overwhelming desires which had to be repressed or stifled. Such split off thoughts, as Jung says, have a special tendency to force themselves in an hallucinatory manner into consciousness. But are such repressed desires always of a sexual origin? That has certainly not been proved. The symbolic representation, as opposed to allegorical, which these individuals employ, must be studied and analyzed to grasp the essential basis of dreams. I agree it cannot be learned from books as his disciples insist and although I have for four years now attempted to understand these symbols, I cannot grow up to his artificial terminology, his convenient determinism, although I try to get at my patient's dreams and get much help in my psychoanalysis from them without entirely subscribing to Freud's beliefs. As Isserlin (9) in his criticisms of Freud concludes: 1. It is not proved that a suppression exists in Freud's sense. 2. It is not proved that if a suppression exists that his analytic methods lead to it or that there is any ætiological connection between a symptom and a discovered complex. Any one who reads Freud's analysis of the phobias of a five year old boy (10) should, I think, see the artificial construction of his views and his failure to answer these criticisms of Isserlin.

Collins (11), who has recently written a short but masterly analysis of Freud's views, rightly, I believe, concludes that his mode of interpretation is too arbitrary and that the psychonanalysis becomes a source of suggestion direct and indirect and that it gives a conspicuousness to the sexual factor which it has not yet been proved to have.

A psychic epidemic among physicians. Hoche (12), of Freiburg, employed this expression in characterizing the widespread and, to him, pernicious use of Freud's method among physicians, and believes that Freud and his followers are in the throes of autosuggestion, and bid fair to compromise neurology with the laity.

Putnam emphasizes the important fact that Freud's critics confound "sexual with sensual," hence their repugnance and distaste for this theory and its literature, and he also asserts emphatically that no one who has not used and experimented with Freud's methods should or can criticise them. Does it follow that every one must adapt his psychology to Freud's so as to understand and use sublimations, substitutions, abreactions, constellations, conversion complexes, and unconscious ideas in the sense that Freud does and believe in his conceptual psychology before he can really work with Freud's methods? All conscientious critics give Freud great praise because his generalizations concerning character formation, his analysis of craving and longing with their inevitable mental conflicts dating from childhood and resulting in stifling and repression of thoughts and acts, and his conceptions of dreams have opened up avenues for study unthought of before in this way, even although individualistic psychology has not been placed on the practical working basis which his followers believe. Freud, as Scott (13) says, has revived atomistic psychology, dividing mental phenomena into artificial elements. Verification of Freud's premises by the results of his methods has therefore this great weakness that it depends upon the reduction in analysis of an individual's affectivity (14) by artificial expedients to elements which every conscientious student of human life recognizes as being present, employing symbols, and associating motives which have not naturally been proved to be correlated subconsciously.

Freud himself, when applying his ideas to individual examples as in his *Zur Psychopathologie des Alltagsleben* (15) and his *Analysis der Phobie eines 5 Jährigern Knaben* (16), shows clearly, in my humble estimation, this artificiality in his conclusions.

Time given to these patients since I have used Freud's methods has, however, become a pleasure instead of annoyance as formerly and even, although I believe that suggestion is a powerful factor, the delving into their inner life without a complete mastery of or belief in Freud's methods, has given me weapons to use in their treatment which were hitherto concealed from me.

Babinski's hysteria theory. Babinski attacked the question of hysteria in a more practical manner. He contends for a restriction of traditional hysteria, calls attention to the numerous diagnostic errors (which must occur unless we study the mechanism of our patient's symptoms), regards the significance of simulation as overvalued, and contends that conditions and phenomena are confounded, which must be separated. True hysteric symptoms are due to suggestion and removable by persuasion (17). They include convulsive seizures, somnambulism, paralysis, delirium, contractures, tremors, and sensory disturbances. Tachycardia, vasomotor, and secretory disturbances are due to a disorder of the affective sphere, but are not hysteric. As a third class of symptoms without any psychic factor, he groups dermography, fever, hæmorrhage, and increased reflexes. Contagion and simulation are therefore more powerful than emotional factors and only suggestible phenomena are actual hysteric symptoms. This manifestly is quite a departure from the older teaching of the French school who, following Charcot and Magnan, regarded hysteria as a dynamic disease and emphasized the occurrence of convulsive seizures and stigmata from that standpoint, the first an accidental factor, the second permanent. He, however, in thus emphasizing that most important state in hysteria—suggestion—has not demonstrated how ideogenetic factors and emotional states differ in this nor explained their conversion into physical acts (18).

Janet's hysteria theory. Janet also regards suggestion as a cardinal sign of hysteria, but looks upon distraction as being of equal importance. As a result there occur subconscious phenomena due to a retraction or loss in the field of consciousness and which become absorbed to one focus. When paralysis takes place, consciousness loses the perception of movement; sensation, when anæsthesia is present. An individual's personality is his dominant note; hysteria occurs when the combination of elemental characteristics going to make for personality becomes dissociated from each other, although this disintegration of personality is not an actual one. As we develop personality through the ideas we grasp in consciousness, we find that either a certain idea is too strongly entrenched or has become entirely submerged. Hence the importance of ideas in hysterical accidents; increased mobility results when certain ideas become too powerful in this retracted field of consciousness. Anæsthesia or paralysis occurs when certain ideas drop out of consciousness.

A consideration of dissociation is important inasmuch as it is the leading element in many theories of hysteria. Dissociation can be brought about if any powerful idea or act (shock or trauma) occurs in a depressed or exhausted individual (Janet); if by reason of certain experiences, the result of trauma, a moment consciousness remains, not entering into personal consciousness (Sidis); these experiences are always of a sexual nature, submerged and gradually forced out of consciousness through shame or fear (Freud). Whenever dissociation has arisen, the dissociated factor is a continual disturbing element until synthetized through catharsis (Freud), hypnoidization (Sidis), or hypnosis.

The conversion of latent emotions into physical phenomena is practically a factor in Janet's framework as well as in Breuer's and Freud's, but he does not lay primary stress upon it, let alone consider sexual phases as the basis for all these latent emotions. Rather does he generalize his conceptions making of this dissociated moment consciousness a reproduction of everything which has gone to make the original moment either acting as an emotional tone alone or as an emotive motor phenomena, the mental state of the patient at the time of the trauma being separated from the conditions which gave rise to the trauma, although associated by reason of their coexistence in time. (Linenthal.)

A logical criticism of Janet has resulted (19) from his accepting the Salpêtrière doctrines as a basis for his psychological interpretations and assuming as proved that most hysterics are degenerate and weak minded (20). He therefore falls into the error many psychologists have of utilizing biological and dynamic and consequently physiological terms to explain his psychological theory. Also, Janet surely cannot believe that anæsthesia was present before an accident in all cases of traumatic hysteria any more than one can with Babinski believe that all anæsthesias in such cases are due to the physician's methods of questioning and consequent suggestion.

Moebius emphasized that hysterics are all those diseased alterations of the body which are due to ideas (*Vorstellungen*). Oppenheim lays stress upon the increased emotional excitability and abnormal influences of the emotions upon physical functions. Hellpach (21) considers the intensive, extensive, and qualitative increase of psychophysical acts and their disproportion to affectivity as the psychological basis of hysteria. Benswanger emphasizes the abnormally increased action of sensation and emotion including feeling tones upon the cortical functional mechanism. Birnbaum (22), in a critical exposition of the psychoneuroses, sums up hysteria as merely a type of psychogenous disposition which is only a form of degeneration. Meyer (23) concludes that hysteria is distinguished from other neuroses by its ability of productiveness, i. e., to reproduce (simulate?) disease types. L. Schnyder (24) regards it as a primitive mental debility without going into details. Starr (25) gives a practical definition calling hysteria a functional nervous condition characterized by a permanent mental state, which may be termed the hysterical temperament, and by sudden temporary attacks of a mental or emotional or physical kind.

Dana (26) goes deeper, defining hysteria as a morbid mental condition in which ideas or emotional states seriously and unwittingly control the body and produce more or less permanent and objective morbid states. He also contends that clinical hysteria is a clear cut picture which all physicians recognize and that these psychological distinctions about which there is so much discussion do not interest the practical physician and are not necessary. Further, abnormal mental states called hysterical he does not consider have any bearing upon the clinical disease, hysteria.

Relationship between the psychoses and psychoneuroses. Although perhaps not strictly germane, the relationship between hysteria and neurasthenia on one side and the psychoses on the other cannot be ignored. Walton gave voice to his conviction some time ago that as the ideoobsessive state dominates all of the so called neurasthenias, psychasthenias, and phrenasthenias, they could all be grouped under the designation of obsessive psychosis or psychoneurosis, and Collins recently has added that "if we call all the various clinical complexes that are classified as functional diseases in which there is a dominant mental element, psychoneurosis, and the victims of such disease, psychoneurotics, it would be a great deal simpler than to call them neurasthenics, hysterics, psychasthenics, hypochondriacs, sufferers from obsession, doubting madness, counting mania, anxiety neurosis, etc." Simpler it would be, and sufficient for the general practitioner if for no other reason than to enable him more than he sometimes does to see the abnormal mental state in question, but it does not suffice for those who desire to delve into the nature of these abnormal mental states not to be able to use words for subdivision which would call up definite mental pictures without going into long explanations. Anxiety neurosis, for instance, to me is a definite picture and means something different from hysteria, just as much as I would wish to distinguish failure of compensation in mitral stenosis or regurgitation, although my results or accomplishments medically would perhaps not differ. Williams (27) makes a plea for the separation of clinical types among the psychoneurotics because they require for their management special psychotherapeutic intervention differing materially one from the other. "An hysteric," he says, "needs reeducation in the criteria of stable judgment, the psychasthenic requires the cultivation of the feeling for practical certainty, for Kant's empirical reason, and a modicum of satisfaction with what has necessarily a certain imperfection, viz., himself and the world around him." He manifestly does not believe in the dynamic nature of mental processes as accepted by Freud and his followers with its reflex system, discharging at one end and receiving at the other. Another difficulty in regarding all as one type of disease would be in limiting these disorders from the psychoses. As Moebius (28) expressed it: "In all endogenous diseases the degenerative basis is a *sine qua non.* In their middle types the borders between them become effaced, finally differences are ignored, and we speak only of nervousness, although the close observer can detect in every nervous individual, paranoiac, maniac, or other elements or signs." These have been too little studied and our narrow conception of neurasthenia has obscured the view. If one commences with nervousness, we can find paths leading to every psychiatric type. We could therefore just as truly include all the psychoses with these psychoneurotics as one grand type of disease and ignore all essential differences in evolution and mentality between them. The essential characteristics indeed often bear close resemblance, and P. C. Knapp, impressed strongly by this resemblance, pleaded for the "Unity of the Psychoses" some years ago.

The anxiety of a sufferer from *Angst* neurosis is hardly distinguished from the anguish of a mild melancholic state and among the cyclothemias are often individuals who are sufferers of such slight periods of emotional alteration that they are classed as neurotic by their physician. In the sensorial field especially how often are patients dismissed as having neurasthenia who are incipient or mild insane types and whose paresthetic complaints betray this. They will tell you of a clutching at the back of the head, of a quivering feeling, of noises like birds singing in the head or like bees, and their misery on account of these sensations is very real to them. Similarly we have taken from neurasthenia and placed among the psychasthenics individuals who are obsessed for a time with as peculiar ideas as and leading them to persecutory or deterrent impulses akin to those of paranoia, or we refuse to if we are devout followers of Kraepelin. At any rate, they are unmistakably psychic types.

Specht (30) has driven this point home when he attempts to draw paranoia into the manic depressive group on the basis of a similar degenerative basis and a similar affective change, a similar periodicity and progressiveness and because many maniac or pseudoquerulants cannot actually be separated from actual querulants. Of course the classical types of both stand far apart, and Specht is only drawing analogies between the rare type of chronic querulent mania and rare type of mild periodical paranoia.

We recognize daily variations in the type of all individuals. We allow a wide limit because we must between the variations which come under sanity and those which make insanity. Manifestly we have and can have no psychic standards to refer to and, therefore, conceptions of milder types of mental change are interpreted by personal not general standards. The pronounced temperamental variations of normal individuals must consequently be similar to the milder degrees of emotional insanity, for instance, when Moebius considered the dyspepsia and the consequent depression of Goethe as evidence of manic depressive periodicity (31), and when Wilmanns draws his analogy between digestive disturbances and cyclothymia (32). Indeed, the recent trend of argument among German psychiatrists has brought together manic depressive insanity and old fashioned neurasthenia of exhaustion in a way which gives point to my argument. Dreyfus (33) after contending that inhibition is a symptom which alone can make a diagnosis of manic depressive insanity analysis inhibition in no way different than many would analyze the mental symptoms of neurasthenia. He considers inhibition to present, a, feeling of decrease of all intellectual functions; b, feeling of difficult thought and conception; c, feeling of decrease of conversational ability; d, feeling of inhibition and indecisiveness; and, e, feeling of tire and tension. If only some of these conditions are present, we have partial subjective inhibition.

Accepting this conception it is seen that no normal person could say that he never suffered from partial subjective inhibition and there would be likewise no distinction except in degree between neurasthenic and insane type of inhibition. This partial subjective inhibition as Bumke calls attention to is not a symptom of disease but a normal psychological occurrence in the course of most depressive states, and must not be confused with the inhibition of exhaustion noticed in neurasthenic states.

No one can ignore the close connection of all endogenous functional diseases, all expressing transitions from normal psychic life so that it is sometimes difficult to say whether an individual is well or sick. No psychic standards can be evoked to define the limits and often maniac depressive, paranoic, or hysteric symptoms are so united and bound together that no simple schematic diagnosis is possible (34). All degrees of character and personality changes are possible according to the accidental and environmental influence which come into play in the life of constitutionally abnormal individuals. All attempts therefore to define the borders of actual insanity from so called psychoneurotic states have failed and must fail because there can be no actual demarcation.

Earlier in my paper I spoke of the narrowness of interpreting these disease types in terms which must be and which often cannot be adequately interpreted. Every one understands that dropsy, indigestion, and similar terms express nothing of the nature of the physical processes at work. Similarly Freud's idea of abreactions, Janet's conception of distraction, Prince's views of association, etc., must be looked upon as elementary symptoms which are dependent upon various factors for their existence. Here is the stumbling block in all these hypotheses. Claparede (35), of Geneva, believes that by interpreting all psychopathological phenomena biologically, this difficulty is overcome. This, however, is not true, for even after such an interpretation, as he himself acknowledges, there remains the problem of determining why such reactions take place in certain individuals and how the connection between neural processes and these psychological reactions occurs, as for instance James and Lange attempted in their conception of the emotions or as Baldwin does in his ideas concerning dynamogenesis. These are, however, not clinical problems and do not interest the practical physician. Rather must he determine what characteristics mark his individual patient. Drunkenness for instance does not typify anything concrete concerning an individual, a drunk might be loquacious, maudlin, depressed, hallucinatory, delirious, etc. In the same way it does not suffice to say our patient is hysteric or psychoneurotic or neurasthenic. What are his individual symptoms, moods, emotions, ideas? From this it is a logical step for us to think of the reasons for the development of these states and symptoms in this individual and consequently a psychotherapy directed against not only the phenomenology of the disease but of the real disease back of the symptoms. This is practically whether we believe this mechanism back of the symptoms a matter of complexes, repressions, substitutions, or a biological and not a neurological reaction.

Our effort so far had been to show the relationship between the borderland of sanity and insanity, and to show our failure to adequately comprehend the basal changes which distinguish the different types of personality composed under the psychoneurotics. For this reason we may likewise expect to find a like difference in regard to the practical application of our present day knowledge.

Psychoanalysis.—Proceeding from a study of Freud's cumbersome methods, Jung elaborated a method of psychoanalysis which has been very fruitful of results. Employing a series of test words, our patient is asked to tell us the association the stimulus word gives rise to as quickly as possibly, meaning thereby the word or idea which it represents to him. The time of each reaction is noted and then both the list of association and stimulus words are gone over again in a similar manner. The analysis reveals delayed reactions and incorrect reproductions which being studied show complexes of ideas which reveal hidden emotional factors, generally unpleasant feelings, often sexual in content. Thus studied our patient's inner life is laid bare to us and we can employ the results in a practical psychotherapeutic way.

The galvanic psychophysical reaction as tested by the movements of the needle of a mirror galvanometer whenever the individual in the circuit becomes emotionally excited has been used in conjunction with Jung's methods by himself and others but the results and their consequent value are open to much suspicion. The same remark applies to Coriat's (36) method of interpreting the influence of emotional states (affectivity) by the pulse changes.

Simplified Psychotherapy.—A consideration of the simpler methods of psychotherapy leads inevitably to but one conclusion, that no matter upon what foundation we stand, the simpler methods give results—even if as has always been the case, they are used unconsciously. The confidence of our patients gained is simplified psychotherapy in itself, for confidence means that one element of doubt in our patient is removed and from this it follows that we suggest and influence our patient whether we are striving or not to do so. The same confidence or belief is at the basis of the emotional movements which the pulpit and the forum evoke. Whether it is that the dissipation of doubt which begets optimism has enabled the unfortunate one to utilize a physiological reserve of mental activity, or to employ nascent energy which has not been in service, or whether it is simply a substitution, a change occurs which betters a patient temporarily and perhaps permanently if he has a wise adviser who by education synthetizes his mental complexes to a harmonious whole, employing at the same time appropriate physical adjuvants.

Dubois (37) believes that this education must be an education of the will. He therefore reasons with his patient and persuades him into normal mentality. My principal criticism of Dubois is that he merely generalizes and that there is no psychotherapy which is adapted to each and every person without modification. Ever since thirteen years ago as a student of Dejerine at the Salpêtrière, I learned to appreciate the value of isolation and persuasion, I have consistently applied them with equal good results. By persuasion, I mean the simpler use of suggesting also, for I believe it sophistry to draw too close a distinction as many writers attempt to do between suggestion and persuasion. Barker's timely criticism (38) that before using psychotherapy, all refinements of diagnosis must be exhausted to satisfactorily exclude other disease states is unfortunately not always carried out, for the enthusiast too often is narrow and regards the disappearance of a symptom like fear and pain as a therapeutic cure. I have not spoken before of coanesthesis as an active condition in affective states, especially of the views of Sollier that hysteria is partly due to modifications of personality resulting from perverted cerebral sensations. I mention it merely because it illustrates how the failure to investigate and to appreciate sufficiently pathological states may give rise to a myopic point of view and treatment. Manifestly these sensations (hammering blows, buzzing, cracklings, noises of all kinds) which occur in the head even if succeeded by fears, change in memory, or a condition of unreality is a physical alteration probably arteriosclerotic and certainly does not explain the mechanism of the modifications of the personality.

Forel (39) argues for the use of the word neurotherapy instead of psychotherapy. Psychotherapy, he says, employs all sources of nervous activity (Neurokym), small nerve activities from periphery to brain, in the brain and back to the muscles including the ganglionic centres, utilizing speech, special sense stimulation, symbols, phantasy, and the emotions. It is in this sense that one must employ psychotherapy, using one or many methods, preceded by absolute thoroughness in physicochemical diagnosis. That the technique is important, as important as is that of the surgeon, any student of abnormal psychology realizes even though the general body of physicians decry any special significance in methods, because of the good results often unconsciously arrived at without them.

By a combination of autoanalysis and education verbally and by letter, I have satisfactorily treated many obsessed patients, who were unwilling to become hospital or bed patients and whom otherwise I could not give the time necessary to interpret and explain to them the state of mind underlying their affective disorder, how it arose and how it must be eradicated. Of course only our intelligent patients could be treated this way, but like others, I find that this class of sufferers are mostly highly intelligent beings. The daily communing with themselves and the registering in a diary of their daily feelings, thought and ideas forces a patient to express and analyze his obsessions as well as he can himself, gives the physician a fair idea of the affectivity of his patient and furnishes a working basis for his talks and letters to the patient so that he can treat of particular emotions or ideas instead of generalizations. I have also repeatedly observed that patients will write down statements which they will not tell you verbally, thus relieving themselves of much inward stress. A further use of association tests or of other methods is often necessary to complete our analysis and extend our observations. Hypnosis as an aid I no longer employ as such, except we consider quiet relaxation conjointly with verbal introspection (Freud and Sidis) as an application of mild hypnosis, a method I resort to with patients who are not intelligent enough for me to utilize any other method. Intelligence is generally roughly determined by the simple question and answer method embracing in our questioning a wide range covering our patient's ideas of religion, ethics, ideas of space and of time, and simple problems in arithmetic. Although in psychoneurotic patients accurate determination of the intelligence of our patients is not important. I have often found that by closely testing it by different psychometric methods, the gain in knowledge of my patient is a help and is even of psychotherapeutic advantage.

I wish to offer here in conclusion as showing the information to be derived from the method of autoanalysis, extracts from the diaries of two of my patients. I might say *pari passu* that both patients were also later the subject of several months of association studies, the results and the conclusions of which I reserve for another paper I am preparing. I offer these extracts not as a complete exposition of these patients' affectivity, but to possibly interest some who read this paper in an easy and practical method which I believe would be of much service to general practitioners. What I publish are only short notes from observations dating over weeks and reveal at places the results of my letters and verbal suggestions to these patients, as well as evidence of many affective and ideogenetic factors in relation to their obsessed states. I might also add that analysis by such methods does not imply a cure despite the views of some ardent followers of these methods.

Analysis I.

Do noble deeds not dream of them all day long.

By-gones are by-gones so do not think of them.

Last night I spent a most agreeable evening at home. The ever recurring thoughts of my former mental condition seemed to be combated by some irresistible power within. I was greatly pleased with myself and wished that I might attain a purely normal state of mind. Although thoughts of my former condition recurred to me on the way home, it was tempered by a more normal state. A repugnance to talking came to me after dinner to-day. I procrastinate a good deal on leaving home. I think that everybody is looking at me and consequently I am quite self conscious when walking. My thoughts are a little too much of myself. I get sore at myself for being so doggoned self conscious. I had a fear of myself while walking down Fifth Avenue.

You see and hear so many things that deter you from your good resolves to be manly.... I had a pleasant time at supper, but after supper a feeling of depression stole over me and I pretty nearly broke down, but something within me combated that feeling. . . . My cousin, a very beautiful widow, came from the theater and stayed all night. I saw her in the morning and was conscious that I had an inward power to do and say things. I had a little timidity in leaving her for my horseback ride and was conscious also that I had done nothing weak. I could feel in coming home on the car that I was able to look at people squarely without any sensitiveness although I thought once that my face gave. . . . I think of the time when I will be able to talk easily and naturally without any thoughts of self. I fear to look at myself in the glass, afraid lest I might see on my countenance some giving of the muscles which will appear weak. I have a vague fear that I will get worse. . . . In my passing a group of men I had a fear of my face giving. . . . I think that people are talking about me in scorn. . . . I passed a very pleasant time at the supper table to-night. The same feeling was to be combated but with more confidence of success. Coming out in the car I was conscious that my countenance gave a little. A feeling of shame came over me but I guess it was more imaginary than anything else. I was afraid of myself in the homebound car. . . . I feared to let myself go, as it were. . . . Left to myself in a game of pool my thoughts ran back to my former mental condition. I have fears of its return but resist those fears. The word "readjustment" I keep in my mind when I get these fears. I think too much of the way I am going to say things. . . . I felt that the fear that I could not laugh as naturally as I wanted to but I enjoyed the show fairly well. . . . I fear to make any engagements as I do not know how I will be the next day. I fear the return of past conditions when I see some fellows who used to ridicule me, but combat them to never come again. The emotion in the voice must be eradicated. If the thing does not come to me easily at first I must not be depressed mentally for any length of time. . . . I combat a feeling of depression on going to church for fear that an uncontrollable sadness will come over me though during the latter part of the service I endured the greatest strain I have yet experienced, wanting to laugh quite a bit but controlled myself. I felt rather depressed on coming away but I combated that and it passed away after a while. . . . I long for companionship with fellows, I long to be doing something which will bring me success. The good man in presence of a moral temptation is afraid and by his fear wins the victory, a fool, not knowing that there is anything to fear, falls struck through with the dart. I went to see one of the prettiest girls I know and I passed one of the most uncomfortable evenings I have ever spent being so nervous that I could not naturally control myself and even the girl noticed it and commented upon it. I never want to endure such agony again. She thought that I had a little too much, for I couldn't sit still. I think I disgraced myself for life. I must learn how to control myself so that I can hold my feelings and sensations in check at any time without an effort so that it won't be noticeable to outsiders. . . .That girl said last night that I looked as if I had the troubles of the world on my shoulders. I think everybody is noticing my uncontrolled state. I feel very uncomfortable even in waiting on the street. This must be stopped at once. I think too much of the way people are going to say things, listening for every intonation of the voice. After playing the violin after supper I felt the stricture just below the abdomen which necessitated my going upstairs and lying on the bed. It passed away after a while and I went out then and took a walk. . . . I have not experienced the feeling that I could not control my actions to any extent except to exercise my will power in keeping those thoughts out of my mind. I can be sad without showing it in my face or actions. My feelings seem to be noticeable in my eyes as is proved by appearances around me. I don't want them to be noticeable anywhere. I seem to think of crying in difficult situations, that I am readjusting them. I fear lest my adverse emotions may some day overcome me. I keep going through these worrisome moments with the thought in mind that you told me: Sufficient unto the day is the trouble thereof. These almost overwhelming fears sometimes come to me and it is very hard for me to throw them off. I often wonder why it is that these foolish fears return so often when I try to erase them from my mind once for all, in short, I am afraid of myself, not self confident as I ought to be and this feeling of uncontrol is awful. . . . There seems to be a movement perceptible to all in that certain direction. It sure is embarrassing at times. I do not know the cause of it, having never experienced it before. I cannot retain a perfectly immovable position in presence of any one. I still feel as if I want to move in that certain direction. Whenever I am out in the open long and it is dark and cloudy or a cloud passes over the sky I have a fearful fear that something from above will come down and crush me to death or do something dreadful to me. This seems to be a very unnatural fear. I think that God will take away from me the blessings that I have for so long if I do the least little thing wrong, although I know God does not do such things, yet the fear is there. The least little thing if it does not turn out right affects me. It destroys my equanimity of mind. I always think if I can get too happy that something will happen to mar that happiness. I am again getting too much affected by public opinion bringing up recollections of my former self when people used to laugh at me. I think that since God did not perform this mental renovation for me, but you did, it is not going to be lasting. I fear at all times that I am going to do something in defiance of God's will which would cause these blessings that I have through you to be taken away from me. If some scheming relative or some other enemy of mine would come to you and say you are making him too powerful, do not make him so powerful, I wonder whether you would be influenced by any outsider to do the slightest thing against my best interests, although I have confidence in you, the doubt came to me forcefully and I want you to express personally your opinion.

ANALYSIS II. Business does not interest me as before. I seem not to pay attention to doing things as though they were not my affairs. This has no connection with my thoughts or short comings. . . . The last medicine has helped me in that the loss of hope and ambition after my attacks (he refers to his depressed days) is not as pronounced. The first medicine deadened my feelings but not now. Rather do I feel like a new man. I did not write in the last few days because I had no thoughts at least no tangible thoughts. . . . You asked whether I had read anything about worry? Why I worry does not interest me, has nothing to do with me, I am past that. . . . I have lost some more interest in reading, although it does not worry me. Your remark that I am really sick is consolatory, for if I was not, what could you do for me? . . . Last night on my way to the meeting, I was gloomy, I asked myself "Was it worth while to go to meetings, interest myself in others just because the doctor wants me to. . . . I went to hear Professor Royce, but he talked too simple and generally to do me any good. Do I really care for the education of the working classes? Well I believe I am a little interested and satisfied that the doctor advised me in this way, for I am learning things myself too. . . . I cannot go to lectures or read science as before and therefore these practical things interest me. . . . When I hear of somebody doing some mean trick which others could condemn—I envy that person because it shows that he or she has strong desires to achieve something and brains to attempt it. I have always been careful to justify my actions, my expenses, my relations to others, as though expecting my relatives to come at any time and cross question me, so I would unconsciously dig up some excuse, although nobody ever reproached me for such acts. . . . I realize how this habit grew and your explanation is a great relief, perhaps I feel better these last few days. . . . Medicine seems to have stopped working as my thoughts are less tangible, a sad feeling is mine and I am inclined to discoveries of new faults which give my heart pangs.

Discovered that the loss of interest in my business was due to inattention, and interest in customers. I get away from myself by studying "my people" and comparing them outwardly to myself. . . .

Found her sick (he refers to his mistress). It did not hurt me at all although I put on a sad face. Sometimes when I do such a thing, I would call myself a liar, and feel very badly right away; at other times, I can play that part without reproach, just as I have been doing for years. To feel disgusted, abandoned, enraged has happened to me when alone and could I leave her who has given up all for me. (This inner conflict had been going on for years with no confidant for his repressed emotions.) Looking into depths clearly predictions of final develop. Curiosity? Anxiety? No. Let it come what may. If well again, thought of doctor bringing me to it, are interwoven with. . . . (Here lapse which the patient refused to fill in, under hypnosis, elicited it was pictures of himself leading a certain young lady whom I knew to the altar with reproaches concerning his mistress' fate.) Why do others commit suicide? Are they cowards? And I? . . .

After first visit to you, doctor, I hoped for a miracle. Possibility of recovery after being ruined by self analysis? If the doctor fails, what is left? I am passed the ability of belittling the gravity of my case. At times, I pity others misfortune, thinking the world full of sorrow, am on verge of telling them that in my own way. At other times I envy them because theirs are human sorrows and mine? . . . I will make concessions. Give me even a half dazed but steady life and I will be satisfied. . . .

Previous griefs are overlooked, the worse I get. Once the private life of people did not concern me, now it is just the opposite, I do not understand higher life and envy private people. . . . Have no longer opinion of refined good or badness, except what is left from habits. Loss of intelligent inclination. How can others accomplish things? Be satisfied with quiet reading? . . . The work at the homes you made me go to, have taken on a little charm and I am learning I think what you mean by machine minds. . . . You know I do not like this writing; I often do it as if forced to, as if you were here compelling me. . . . I hate my thoughts and would subdue them, but you say, no, write them down, talk about them with me. . . . What makes me obey the doctor's orders Is it his influence upon me, his personality, or my readiness to take anybody's advice or because he advises me nothing I have found too hard to accomplish. . . . I have always had hidden thoughts, but never thought much of myself. When people would point out to me some fault like stinginess, a thought would flash through my brain "He does not know my real faults." When with others I would imitate to try and reflect their good qualities or manners. When I behold firm friendships, having faith, unshattered faith, thinking of each other, willing to do for each other, depriving themselves of conveniences for others, I wonder . . . and yet I am learning new thoughts. Will I ever see the world as the doctor sees it? I have studied Darwin and Spencer and should see how my little person is nothing in this world, but it is myself. . . . And that I am only myself I see is what you mean in not having thought of others welfare. . . . Self egotist? . . Well, I'll be a good passenger in your boat, Captain, for the future, I hope so, at least, Doctor, and no longer a Tityus to myself as you styled me.

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800 KEENAN BUILDING.

ACUTE PRIMARY POLYMYOSITIS, WITH REPORT OF A CASE.*

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The occurrence of a primary polymyositis or an inflammation of the muscular tissue in general has been disputed by many observers. By a certain number also the condition has been held to be always a local one. Recently, however, a number of cases have been placed on record, and the clinical picture is so definite a one that there seems to be no room for doubt that the disease may be accepted as a clinical entity. The picture is a clear cut one. To this we will return later and may illustrate it with our case which is a typical one.

It is probable that the disease is more common than would appear from the fact that only about thirty typical cases have been recorded, for the disease may easily be confounded with neuritis or rheumatism. This accounts for the fact that many of the reported cases have been diagnosticated first by neurologists to whom they have been sent.

The onset of the primary, nonsuppurative type, to which our case belongs, is very gradual. The patient suffers from a feeling of malaise, slight nausea and headache, fatigues easily, is weak, has cramps and indefinite pains in various parts of the body. Next appear the objective signs: The limbs become œdematous and cyanosed, the subcutaneous tissues swollen, the face and eyelids puffy, and the skin of a peculiar coldness with a purplish mottled appearance. When the œdema subsides the muscles show a peculiar condition, having a hard, doughy feel, tender to the touch, and often in places a distinctly woody feel. Soon after this the infiltration of the muscles draws the two ends together and various contractures appear; more marked in the extremities. Later the muscles atrophy. During all this time the nerves are not involved. All reflexes are present, slightly lessened in the early stage and more so later, due to the marked loss of muscular strength. Electrical reactions are normal. The involvement of the muscles shows a certain sequence. The extremities are affected first, then the chest, abdomen, neck, and throat. The brain and central nervous system show no symptoms.

The course of the condition may vary somewhat, and by some three distinct varieties have been described.

1. Simple acute myositis. Onset is with lassitude and mild constitutional disturbances, pain, and tenderness in certain groups of muscles. Patients either improve after a few days or the type lapses into one of the other varieties.

2. Acute infectious. Great lassitude and marked pain. Constitutional disturbances are severe. Affected muscles are prominent, very tender, woody, hard, or doughy to the feel and sensitive. Patient takes position to relax the affected parts. When suppuration begins high fever, cutaneous eruption, and severe symptoms are present. Usually ends with diarrhœa

3. Primary subacute infectious. Prodromes are long, lasting from three to five weeks, pain, lassitude, slight fever, nausea, headache, and weakness, then chills, some fever, œdema of face and extremities, pain, and redness, macular eruptions on the face and extremities, gastric disturbances, patient grows rigid and helpless; reactions and reflexes are much lessened or almost disappear, constipation marked, thirst, etc., occur.

Form two lasts from five to twenty days, and most patients die. If they recover they do so in three or four months. In form one the patients as a rule recover unless they lapse into form two. Form three lasts from three to four months and few patients recover. If they do it is a matter of many months or of years before recovery is complete.

Differential diagnosis must be made from rheumatism, typhoid, suppurative arthritis, trichinosis, multiple neuritis, and osteomyelitis. It is almost often and likely mistaken for multiple neuritis and trichinosis.

Polymyositis.	*Multiple Neuritis.*	*Trichinosis.*
Attacks extremities;	extremities;	tongue and flexors;
pain, slight;	often intense;	aching;
local redness and eruptions;	no redness;	no redness;
gastric symptoms:	no gastric symptoms;	gastric symptoms;
tenderness greatest on belly of affected muscles;	along nerve trunks;	all of muscles;
reflexes lessened;	lost;	unchanged;
contracture present;	rare;	none;
blood normal;	normal or anæmia;	eosinophilia.

Ætiology. The disease is altogether likely infectious. Cases have been reported as due to *Staphylococcus albus* and *aureus*. In favor of this view is the method of attack and onset of the disease. All ages are attacked except early childhood. Early adult life seems to be the period of choice of the disease. It sometimes seems to have followed other infectious diseases.

Pathology. In the septic and purulent forms at times complete destruction of the affected muscles takes place. In the other types varied changes have been observed. Waxy and fatty degenerations. If the case has been of long standing portions of affected muscles are changed to connective tissue. This change may involve nearly the whole of some muscles, but generally enough tissue is left to allow of a certain function remaining, this explains the peculiar weakness, as the disease seems to attack only a portion of the muscular fibres. Early in the course there may be hæmorrhages into the muscle substance.

Prognosis. The attack is often fatal, some few patients have been reported as recovering. The greatest dangers are the involvement of deglutition and of the myocardium. Is very apt to leave permanent atrophy and resultant crippling.

Treatment. In the early stages diaphoretics and hot applications. Sodium salicylate has seemed to be of benefit. Later the administration of strychnine, and tonics and the use of electricity and tonics. Massage has been of use.

Case. *Myositis.* Mrs. E., aged twenty-eight. Family history. Father died at sixty-six of cystitis contracted in the army. Mother living at sixty-six, well. Has four sisters and two brothers living and well. One brother died, aged thirty-six, of Bright's disease.

Personal history. Patient had been always well. Had an attack of catarrhal appendicitis, seven years ago. One year ago was treated for a few months for a slight anæmia with some cardiac palpitation.

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*Read before the Academy of Medicine, Schenectady, April 16, 1910.

In September, 1909, patient noticed that she was not quite of her usual strength; suffered somewhat from pains more marked in her arms. For this condition she came to me early in November. Complained of constant pain and weakness in her arms and shoulders. There was a pronounced wrist drop. After a somewhat cursory examination in my office I made a diagnosis of neuritis and prescribed strychnine. By Thanksgiving her trouble had increased and she showed signs of considerable trouble in her legs. After a careful examination made at this time the diagnosis was made.

By December 10th the patient could not walk. Marked pain and soreness in all the muscles of the legs and arms. Those most affected were the biceps, flexors of the hand and wrist, the calf muscles, and the thigh. Muscles were hard and of a peculiar rubbery feeling. There was at this time no rise in temperature, electrical reactions and normal reflexes were present but weak. Appetite was good, bowels were regular but moved with difficulty on account of weakness, needing to be assisted by an enema. Patient slept well but was much annoyed by not being able to turn herself in bed or adjust the bedding. Also was much tired by the effort of holding up her head and trunk.

During January and February patient improved gradually. Strength returned slowly but contracture became marked. If the hand was extended on the wrist the fingers were greatly flexed and if the fingers were extended the wrist was flexed. The same condition prevailed in the legs. She could only walk by wearing very high heeled shoes. If her shoes were removed on standing she could not get her heels on the floor. Examination at various times showed a normal blood count. No eosinophilia. No bacteriæmia at any time. Urine normal. During the stage of great weakness she suffered from hyperidrosis.

In March and April improvement was more marked. Contractures were much lessened. She could walk and use her hands fairly well to sew and feed herself; could comb her hair. There was still more weakness of the extensors than of the flexors; some of the muscles were markedly atrophied. Patient had gained about ten pounds in weight.

613 Union Street.

OUR EXPERIENCE WITH VACCINE THERAPY IN ACUTE INFECTIONS.

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While the object of this paper is primarily to give our experience with specific vaccines in the treatment of infectious processes, yet it might not be amiss for us to enter into a somewhat brief discussion of the subject in its various aspects, in order that the principles involved may be more thoroughly understood, and perhaps justify, if that be necessary, the enthusiastic attitude we may assume to hold with reference to treatment as indicated.

Although of comparatively recent origin, the results obtained by vaccine treatment, intelligently administered, have been so uniformly successful that at the present time it has become the treatment of election in some types of infection, and statistics show encouraging results in the great majority of infectious processes, in which treatment by vaccines has been attempted, where treatment has been instituted sufficiently early and carried out with precision and thoroughness.

THE NATURE OF THE REACTION.

It was in 1884 that Metchnikoff gave to the medical world the results of his study of the white blood corpuscle, and demonstrated beyond contradiction their great value in protecting the animal body against disease and infectious processes, and these were later considered by him to be the sole agents active in the elimination of disease producing organisms from the body.

Later work by Wright and Douglas, of London. partially disproved the theory of phagocytosis as presented by Metchnikoff, for they demonstrated in 1903 that all blood serum contains a substance which has a definite action on bacteria, and so changes them that the influence of the white corpuscle on them is greatly enhanced and their inhibition more readily accomplished. This substance was called by them "opsonin" and they concluded, as the result of their investigations, that the opsonins played a definite and important part in the process of phagocytosis, that instead of the white corpuscle being the sole element active in the elimination of infectious organisms according to the theory advanced by Metchnikoff, the opsonins played an equally important part, in the preparation of the bacteria for ingestion by the corpuscle. Wright later elaborated a technique by the means of which he could definitely determine the amount of opsonin present in the serum of any given individual, suffering from infection, as compared with that of any normal individual, and this he used as a means of diagnosis of infectious processes, enabling him to determine the organism responsible for the condition. In obscure infections, in which the nature of the bacterium cannot be determined readily, the opsonic index is of inestimable value, as can be readily seen, as a diagnostic procedure, but as a rule there is little or no difficulty in determining the organism, especially if free pus is obtainable and a cultural growth can be made. In the cases which we present, the infecting organism was readily ascertained, therefore the determination of the opsonic index was not undertaken, and the dosage of the vaccine was regulated by the experience of others whose work we have followed, and the clinical symptoms presented by each individual case. I will not attempt therefore to describe the technique of opsonic index determination, as this can be readily obtained by reference to the literature on the subject; but the object of the procedure is to ascertain the bacterium responsible for the existing process, and this having been discovered by comparison with the normal, the index of the infecting bacterium being low, the result now desired would be to raise the index, and this Wright discovered could be done by the injection of a suspension of the bacterium causing the infection, killed by heat.

THE TECHNIQUE OF THE PREPARATION OF VACCINE.

An incision is made into the affected area, if the infection is superficial and free pus is not obtainable, and a small amount of pus is planted on the usual culture medium. The different organisms grow best on different media, but the one we find to be most applicable for general work is Loeffler's beef blood serum. The culture is placed in the thermostat and allowed to grow for from twenty-four to thirty-six hours at a temperature of from 37° to 38° C. At the end of this time it is usually possible to tell macroscopically the nature of the infecting bacterium, because of the cultural peculiarities manifested by the various organisms. A smear is made from the culture, aseptic precautions being observed, and this stained with Loeffler's methylene blue for one or two minutes, and the gross examination verified microscopically. We now pour five cubic centimetres of sterile normal salt solution, containing one quarter of one per cent. carbolic acid, into the tube and the growth is removed by gentle stroking with sterile platinum needle, care being exercised not to remove any of the culture medium. The suspension of bacteria is now transferred to another tube, an additional five cubic centimetres of the salt solution added, and the tube is then sealed in the usual manner. After cooling, the suspension is shaken vigorously for about fifteen minutes in order that the colonies of bacteria may be completely disorganized and incubation thus prove more effective. The suspension is then incubated for from twenty to thirty minutes at from 55° to 60° C., at the end of which time the bacteria are ready for counting. We do not consider it necessary to plant a culture from the incubated suspension to determine whether or not all the bacteria have been killed, but this is frequently done, as any bacteria not destroyed by heat are killed by the carbolic acid or so much attenuated in virulence that the result of their injection is not detrimental or injurious.

To count the bacteria we take equal parts (one drop) of suspension of bacteria and human blood, mix them thoroughly, and then make a smear on the ordinary microscopical slide. The various steps in the process of staining are as follows: 1, Smear on slide; 2, dry in air; 3, fix in saturated solution of bichloride, two minutes; 4, dry thoroughly; 5, stain with Loeffler's methylene blue, cold, 4 or 5 minutes; 6, wash in water and dry.

When this preparation is examined microscopically, the red cells appear as greenish discs, the bacteria of course assuming the characteristic blue color. A number approximating 250 red cells are counted under the oil immersion lens, the eye piece having been previously altered by the introduction into its chamber of a disc of dark paper with a hole in the centre of such a size that only six or seven red cells can be seen in the field at a time. While counting the reds the number of bacteria seen is recorded and from this we estimate the number contained in the suspension. If we consider 5,000,000 as the number of reds in a cubic millimetre of blood of a normal individual, the number contained in a cubic centimetre would of course be 5,000,000,000 hence we get the following equation which gives us the number of bacteria in a cubic centimetre:

$$R : B :: 5{,}000{,}000{,}000 : X,$$

X representing the number of bacteria contained in a cubic centimetre of the suspension. The suspension is then diluted to a strength convenient for use, sterile normal salt solution being used as the diluent.

THE TECHNIQUE OF VACCINE INJECTION.

The rules for the use of vaccine as formulated by Wright are essentially as follows:—1. The dosage and interval between doses shall be determined by observation of the opsonic index. 2. Injections shall be made at intervals varying from two to three days or more. 3. Vaccines shall be prepared by heating suspensions of bacteria in sealed tubes at sixty degrees centigrade for one hour.

Our experience in the use of vaccines having been necessarily limited because of the work having been undertaken but recently, and also because of the comparatively few cases we have been called upon to treat by this method, we are not in a position to confirm authoritatively the opinion as advanced by some investigators, that these rules have been demonstrated to be somewhat incorrect when applied to acute conditions. We have followed more or less closely the work of Leary and the results obtained have been eminently satisfactory. His opinion[1] concerning Wright's rules is as follows:—

> *The opsonic index.* Our experience has led to the conclusion that the opsonic index, while useful in obscure infections for diagnostic purposes, has little value for controlling treatment of acute infections, and among these more particularly general infections.
>
> *The interval between doses.* In chronic diseases, especially tuberculosis, it is possible to demonstrate that the injection of vaccine in considerable doses is followed by a temporary lowering of the patient's resistance—a frankly negative phase which may persist for some time. Further use of vaccine during this period is at least not desirable and may be harmful. In acute conditions, however, with proper dosage of vaccines the negative phase is either ephemeral or absent. . . .
>
> *The time of exposure of suspensions of bacteria to heat for the purpose of killing.* It is recognized that the reaction to vaccines is a specific one; thus staphylococcus vaccine is of value only in the treatment of staphylococcus processes. Its use gives rise to an increase in the resistance of the individual to the staphylococcus alone, or, if it raises the resistance to other organisms, it does so secondarily and to a minor degree. . . . The specificity of a bacterium is a property residing in its albumens, and biological tests demonstrate that albumens which are exposed to excessive temperatures, or for long periods to temperatures which are not ordinarily excessive, usually lose their specific characteristics.
>
> In our early work with streptococcus general infections we followed Wright's rule of exposure to 60° C. for one hour. Our clinical results from the use of such vaccines were unsatisfactory. Progressive shortening of the time of exposure brought us ultimately to fifteen minutes as the time limit giving the most desirable results. At the end of this exposure positive cultures of the streptococcus may be obtained from the suspension.

THE REACTION TO VACCINES.

The immunity conferred upon the individual by the injection of bacterial vaccines we now know to be an active process as differentiated from passive immunity which comes to the individual through the inoculation of immune sera. The distinguishing features between the two types of immunity are too well known to be dwelt upon at length, but for the sake of completeness we give the essential points in their distinction: Passive immunity is conferred upon the individual by an agent which comes from without, and in the production of which a second animal plays an important part. The immunity or protection thus gained is usually transitory, though its action at the time may be rapid and effectual. A large number of immune sera have been produced by the inoculation of animals with the toxines of the specific agent causing the particular process, but up to the present time the results obtained from the great majority of these, in the presence of an active pathological process, have been somewhat disappointing. The most brilliant exceptions to this general statement are seen in the results obtained by the use of antitoxine in diphtheria, and more recently those obtained by the use of serum in the treatment of cerebrospinal meningitis. Active immunity, on the other hand, such as is produced by the use of vaccines, is brought about by the stimulation of the immunizing apparatus of the individual to produce substances, opsonins, which are detrimental to the further proliferation of the infecting organism, and whose action on those present is such that they are more readily ingested by the phagocytic cells; hence we see the absolute necessity for the use of vaccines while the patient has still some reacting ability left.

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[1] *Boston Medical and Surgical Journal*, November 11, 1909.

THE DOSAGE OF VACCINES.

As a general rule, unless the initial dose is unusually large, there is no general systemic reaction, such as headache, pain in the extremities, nausea, vomiting, etc., although we do usually get a local reaction at the point of inoculation, but this ordinarily disappears in the course of two or three days.

In infections produced by the staphylococcus the dose varies from an initial dose of from 150,000,000 to 1,500,000,000, the interval between doses varying according to the kind and severity of the infection, and treatment is continued after all symptoms have subsided. Stock vaccines have been found to be adequate in most cases.

In streptococcus infections the dose varies from 50,000,000 to 150,000,000, given every four to eight hours, and the best results follow the use of autogenous vaccines, the stock being not so serviceable because of the many strains of this organism.

Lesions produced by the colon bacillus are best treated with autogenous vaccines and the dose and interval between doses are the same as for streptococcic infections.

An initial dose of 100,000,000, repeated every four to eight hours, gives excellent results in infections produced by the pneumococcus. Stock vaccines have proved adequate in many cases, but an autogenous vaccine is desirable if it can be obtained.

RESULTS OBTAINED IN OUR CASES.

The four cases we report at length were somewhat unusual in their severity and will serve to illustrate the potency of vaccine therapy in these conditions.

The appended table shows the results obtained in all our cases in which vaccine treatment has been attempted. It is to be understood, of course, that this form of treatment is simply an accessory clinical procedure, the usual treatment for infections being carried out simultaneously with vaccine inoculation. It would seem, therefore, somewhat of a problem to determine just how much to attribute to the efficacy of vaccines in the ultimate healing of infectious processes, and it is a very easy matter for one to become either an enthusiast or a pessimist, depending upon the results obtained in a small number of cases. There are always some few who stand ever ready to decry any new method, even though their knowledge of it may be so limited that they would be unable to intelligently discuss it. This is inevitable, but in the last analysis, facts substantiated by results are always more dependable than mere opinions.

Case I. J. L., male, age thirty-five, attendant, lobar pneumonia.

After exposure on a raw, rainy day patient was taken sick with a slight headache and vomiting. He worked for half a day and went home suffering from intense headache and nausea. He had no appetite and experienced feeling of general weakness, was unable to sleep at night from increased severity of these symptoms and a severe pain over lower lobe of left lung. A physician was called next morning.

Second day. Patient sitting up, face flushed, expression anxious, severe pain in chest, expansion limited. Slight dulness on percussion; no râles; breath sounds harsh; temperature 102° F.; slight dry cough.

Third day. Patient in bed. Objective and subjective symptoms more marked, and temperature at this time was 103° F. Moist râles were heard over lower left lobe, and percussion showed increased dulness. The sputum had the characteristic rusty appearance typical of many pneumonias.

Fourth day. During the previous night patient was delirious, and had hallucinations of sight. Temperature 103.4° F. The headache and pain in chest were very intense and the cough somewhat distressing. The sputum continued to be blood streaked. Pulse rapid and strong; pulmonic second sharp and accentuated.

Fifth day. Patient's condition same as on previous day and temperature remained at 103.4° F. Pneumococcus vaccines, 50,000,000 were given at nine a. m. At nine p. m. temperature had dropped to 101° F. and another dose of 50,000,000 was administered.

Sixth day. Patient was much improved; only slight headache; he slept a little during the night; pain in chest not so intense, and patient felt much more comfortable. Temperature 99° F.

Seventh day. Patient much improved; slept fairly well during the night; expression and mentality clear since first injection of vaccine. Cough and expectoration still continued. Physical condition very good, and patient went on to rapid convalescence.

In addition to treatment by vaccines patient received one dose of strychnine, 1/30 grain, and was put on liquid diet. Two doses of morphine ¼ grain were given to relieve the headache.

Case II. P. C., age thirty-five; Septic knee and foot.

July 28th: Patient spent considerable time on his knees praying and walked from place to place on his knees dragging his feet after him. As a result the dorsal surface of toes of both feet showed numerous abrasions as does also the left knee. These became infected and infection spread rapidly until the right foot had become considerably swollen and the knee also showed the same condition. Incisions were made for drainage, a culture taken from the foot and vaccines prepared. Examination showed streptococci, and staphylococci. Temperature at this time varied from 100° to 103° F.; patient was delirious for several days, and his condition was so serious that his people were notified.

There seemed to be very little benefit, if any, derived from the first vaccine; temperature remained high and infection seemed progressive. A new culture was accordingly taken, this time from the knee, and on examination showed a pure *Staphylococcus aureus* infection. The first inoculation of the new vaccine was given on August 9th and was followed by a slight reaction. A second dose of 175,000,000 was administered on the 11th and from this time on steady improvement was noted. The discharge of pus became progressively less, as did also the swelling in both foot and knee. On August 14th the temperature was 99° F. and ever since then normal. On the 15th the knee was free from pus and the foot was discharging but little. On August 18th the process in the foot had entirely cleared up.

Case III. H. T. H., male, age thirty-two. Attendant.

Pyorrhœa alveolaris. About April 1st patient noticed that gums had been soft for several days and that the secretion of saliva was rather excessive.

April 8th. Throat became sore, swallowing difficult, anorexia, did not sleep well, general feeling of weakness; gums at this time were bleeding continuously and large amount of pus was present. The throat was so excessively sore, and swallowing so painfully difficult that patient could take nothing but milk for three or four days at a time. This condition persisted over a considerable period of time, during which treatment with mouth washes and silver nitrate was instituted, but apparently patient benefited but little, and finally treatment by vaccines was attempted.

A culture was made from the pus present and on examination showed, as was to be expected, streptococci and staphylococci. Vaccine was prepared and first dose given on June 28th was followed by a general systemic reaction. Marked improvement of the condition was noted about one and one half weeks after the first dose had been given and was progressive, so that on July 19th, three weeks after the initial dose, vaccines were withheld. The gums at this time were hard, and there was no pus manifest.

Case		Age	Disease	Bacterium	Duration before treatment	Number of inoculations	Average dose	Duration after treatment	Results
1	J. L........	37	Lobar pneumonia	pneumococcus	5 days	2	50,000,000	2 days	cured.
2	P. C........	35	Septic knee and foot	*Staphylococcus aureus* and *Streptococcus*	8 days	12	180,000,000 50,000,000	16 days ·	cured.
3	H. T. H....	32	Pyorrhœa alveolaris	*Staphylococcus Albus* and *Streptococcus*	2 months, 29 days	11	200,000,000	21 days	cured.
4	A. L........	24	Septic hand and forearm	*Staphylococcus aureus*	5 days	9	260,000,000	5 days	cured.
5	J. B........	37	Typhoid	typhoid	15 days	3	30,000,000	5 days	cured.
6	A. B........	30	Furuncle on neck	*Staphylococcus aureus*	4 days	2	260,000,000	4 days	cured.
7	J. N. Z.....	40	Abscess of elbow	*Staphylococcus aureus*	3 days	3	250,000,000	5 days	cured.
8	M. F........	51	Carbuncle on neck	*Staphylococcus aureus*	7 days	6	495,000,000	25 days	cured.
9	E. G........	26	Subcutaneous abscess on knee	*Staphylococcus aureus*	4 days	4	330.000,000	8 days	cured.
10	J. I. M.....	37	Otitis media	*Staphylococcus aureus*	10 months	10	345,000,000	1 month+	improved.[1]
11	E. L........	35	Typhoid and pneumonia	typhoid	1 month, 10 days	5	30,000,000	18 days	died.[2]
12	E. D........	48	Carbunculosis	*Staphylococcus aureus*	1 month, 27 days	2	390,000,000	3 days	improved.[3]
13	S. L........	29	Acne	*Staphylococcus aureus*	6 months	2	250,000,000	4 days	cured.
14	J. M........	45	Subcutaneous abscess of forearm	*Staphylococcus aureus*	7 days	2	150,000,000	2 days	cured.
15	P. B........	30	Furuncle, forearm	*Staphylococcus aureus*	8 days	2	200,000,000	5 days	cured.
16	M. B.......	26	Septic hand	*Staphylococcus aureus*	5 days	3	120,000,000	6 days+	improved.[1]
17	M. S.......	28	Furuncle, lip	*Staphylococcus aureus*	3 days	1	200,000,000	5 days+	improved.[1]
18	J. McD.....	9	Subcutaneous abscess of foot	*Staphylococcus aureus*	1 month	1	150,000,000	6 days	cured.

[1] Still under treatment.

[2] Patient in exhausted condition when treatment was inaugurated.

[3] Was sent to a general hospital three days after treatment was begun. Died subsequently of diabetes.

During the time of treatment by vaccines patient received a dose every other day, the average dose being 200,000,000, and in addition the usual mouth washes were continued.

Case IV. A. L., female, age twenty-six, nurse, septic hand and forearm. On June 17th was scratched on the back of right hand by a patient, but no attention was paid to it and the scratch remained untreated for three days. When shown to the physician in charge of the service the entire hand was somewhat swollen, red and painful, and showed evidence of increasing infection. An incision was made to allow free drainage, and a small amount of thick yellowish pus drained through the opening. A culture was taken and a wet bichloride dressing applied to the wound. On examination, culture showed a pure *Staphylococcus aureus* infection, and a vaccine was accordingly prepared, it being ready for use on the morning of the fifth day. At this time the swelling in the hand had increased greatly, and had spread so that the entire forearm, very nearly as far as the elbow showed involvement of the process. Evening temperature of the patient varied from 100° to 101° F., and she was incapacitated for duty.

An initial dose of 100,000,000 vaccines was given on June 22d and this increased on succeeding days so that on June 24th she was getting 500,000,000. For the next three days she received two doses each day of 250,000,000 each, and then vaccines were discontinued. Marked improvement was noted after the second dose had been given, and when vaccines were withheld the swelling had completely subsided, the redness and pain were absent, and the wound was clean and free from discharge.

In addition to vaccine treatment the wound was dressed twice daily with wet bichloride dressings.

CONCLUSIONS.

Although our series is not sufficiently large to warrant our stating that we have in vaccines a panacea for all infections, we feel that the results obtained justify our drawing the following conclusions:

1. The opsonic index, as a guide to treatment, is not an essential element if the clinical symptoms be carefully observed and the dose regulated accordingly.
2. Acute infections, such as acne, furuncles, and subcutaneous abscesses, show brilliant and uniform results.
3. The best results are obtained when the dose is slowly increased through successive inoculations.
4. Autogenous vaccines are not essential in the treatment of staphylococcus processes.
5. The duration of infections is perceptibly shortened by the use of vaccines.

In concluding this paper, I desire to acknowledge my indebtedness to Dr. John R. Ross for many valuable suggestions and assistance with this work.

SOME SURGICAL CONSIDERATIONS OF NONMALIGNANT OVARIES.

By Ralph Francis Ward, M. D.,
New York.

Sufferers from the different nonmalignant forms of ovarian inflammation and degeneration, constitute one of the most satisfactory classes of patients whom the surgeon is called to operate upon, provided the greatest care and discretion are exercised in selecting the cases which really require operation, doing that only which is necessary, and always endeavoring to save as much ovarian tissue as is compatible with complete amelioration of the symptoms for which the operation was undertaken.

The days of wholesale oophorectomy for the radical cure of pain in the ovaries, for the relief of pain in the lower abdomen, or for various reflex disturbences which were rightly or wrongly attributed to an ovary, belong to the past, and conservatism is generally practised. On the other hand to neglect a patient and allow her to suffer continuously, undermining her health, crushing her spirit, consuming her nerve force and stability, casting gloom over her present and future horizon, and condemning her to chronic invalidism, when an ovarian operation would return her to perfect health, is not only inhuman, but cowardly. This does not apply to the woman who, "would rather die than have an operation," but to her who would undergo operative interference, if the existing conditions and the benefit to be derived from an operation were properly explained.

Operations upon benign tumors of the ovary, as cysts and dermoids, and also sclerotic and calcific degeneration, should be undertaken with the determination to leave the tubes intact if possible.

In the cystic ovary, as much of the organ should be left as it will be possible for Nature to refunctionate, and no more. When the cysts are small, and their growth has not had the effect of obliterating ovarian tissue, it is a great mistake to remove the entire organ. Here conservatism yields the best results. The cysts if few and small, should be enucleated, and the edges approximated with fine catgut, to prevent oozing and adhesions. Many minute and superficial cysts are best treated by puncture and evacuation. Large cysts are aspirated with a large trocar and cannula, thereby making the base more accessible, and rapid removal through a small incision more accurately and easily accomplished. Very large cysts seem to be getting fewer, probably because they are diagnosticated and operated on before they have attained great size. I recently removed a cyst which contained over eight quarts of fluid.

The sclerotic or calcific ovary, if degenerated to the degree of provoking surgical interference, should be entirely removed, if as is usually the case, only one side has suffered from the degenerative process. But when both organs are affected, only that portion of one ovary which has not undergone pathological changes should be allowed to remain. One can usually find at least a small piece of healthy tissue. If, however, nothing but degenerated tissue is found, it should all be removed unhesitatingly. That some ovarian tissue should be left in every case possible, is recognized and practised by the majority of abdominal surgeons. There are, however, exceptions, as occurred in a recent case of mine, where I was doing a hysterectomy for uterine fibroids, and left oophorectomy for cystic degeneration, in a woman forty-four years of age. The left ovary had been the cause of semiinvalidism for over three years. I found it completely obliterated by multiple cysts, while the right ovary was also irreparably degenerated. In view of the involvement of uterus, tubes, and ovaries, her age, and her previously expressed wish, that every thing be done at once to preclude if possible, future pain or operation, I did a complete hysterectomy, removing uterus, tubes, and ovaries en masse, and excised her fibroid appendix on the way out. The patient made an exceptionally satisfactory recovery in every way, and now five months after operation, she is enjoying better health than for many years. All preoperative symptoms have been abolished by the complete operation.

A few months ago I removed an ovary from a patient who had suffered the greatest difficulty and distress for nine years. The ovary contained many minute cysts, and its surface was studded with calcific deposits which imparted the feeling of small fragments of shell. This patient made an uneventful recovery, and has experienced none of the symptoms from which she suffered before her operation.

The sclerotic type is exemplified in a patient who had suffered for twelve years from all manner of symptoms, which had steadily grown worse, until, for the two years prior to operation, she had to spend three out of every four weeks in bed, and could not do anything during the one week she was about. Her suffering had upset her mind as well as her nervous system. At operation I removed the most completely sclerosed ovary that I have ever seen. It had a muddy, bloodless appearance, and the periphery was cut into a rough and ragged mass, by the contracted connective tissue trabeculæ. The centre was a solid mass of connective tissue. The other ovary was normal. The appendix gave evidence of previous inflammation, and was bound down in the middle. It was removed. Recovery was satisfactory, and the patient returned to her home in the country, where she regained strength of mind and body, in a surprising manner. A little over a year after her operation, I was called to the country to see this patient's mother, upon whom I operated for a gangrenous appendix with abscess, as soon as preparations could be made. My former patient had regained her health and strength to the extent that she was able to help with the preparations for the operation on her mother, and afterward nursed her back to perfect health.

I stated in a previous article, entitled The Surgical Appendix (*New York Medical Journal*, July 10, 1909): "Whenever the abdomen is open for the relief of an inflammatory process in the neighborhood of this organ, (the appendix) it should be removed whether it appears to have shared in the inflammatory process or not." The ovary should be investigated during the course of appendix operations, and pathological changes properly treated. By so doing, the unfortunate condition in which a patient presented herself to me, a short time after leaving the private pavilion of one of our foremost hospitals, might have been avoided. She had been operated upon for appendicitis, but the condition of her right ovary was not ascertained, although no doubt the inflammation in the appendix was secondary to that of the right ovary. Her symptoms were not in any way relieved by the appendectomy. I found upon examination, that she had a badly degenerated right ovary, for the relief from which she will have to undergo another operation. All could have been done at the same time, had the surgeon taken the precaution to investigate the condition of the right ovary during the course of the appendectomy.

Such neglect throws discredit not alone on the operator, but unjustly upon surgeons as a class.

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REPORT OF A CASE OF PELVIC PERITONITIS COMPLICATED BY POSTOPERATIVE HYSTERIA.

By J. Dawson Whitall, M. D.,
Philadelphia.

The following case is interesting not from the fact of its rarity, for records of pelvic peritonitis are rather common, but from the postoperative complication, namely hysteria. The consensus seems to point out that a great many cases (especially following operations on the generative organs) develop into more or less well marked cases of neurasthenia depending upon the following factors: 1. The length of time the patient suffered from the diseased condition before operation; 2, the severity of the operation; 3, the postoperative care and attention *following* the discharge of the patient from the hospital. A great deal is said and done before operation and during the immediate convalescence, but when the patient is consigned to the family physician with more or less vague instructions to "build up the patient," etc., a large percentage of these patients are treated in an aimless sort of way and quite a few are left to their own resources. Is it any wonder that cases of nervous origin develop? The soil is receptive and the seed grows. This is not meant for criticism, but is merely a plea for the more thorough attention to the after treatment of this class of cases.

Case. E. D., married, æt., thirty-two.

Previous history: Patient had always enjoyed good health. Menstruation had been always regulaar and normal. For the last year she had had a whitish discharge. She had had no children or any miscarriages. No venereal history obtainable.

Present trouble: On March 28, 1910, she lifted a heavy weight and felt a rather sharp pain in the lower abdomen. At that time she was menstruating. She went to her work the following day and fainted from pain at her desk; felt feverish, and had a constant desire to urinate. She came home and went to bed. I was called to see her March 30, 1910.

Physical examination: Lungs and heart were apparently normal. Pulse, 120; temperature, 102° F.; respiration, 28 and shallow. Abdomen, distended, tympanitic, and extremely sensitive, especially over the lower left quadrant. No tenderness over appendix; very sensitive over uterus. Muscular rigidity present over left lower quadrant but no mass distinguished. Patient was so exquisitely tender that nothing was made out of the vaginal examination.

Diagnosis: Pelvic peritonitis.

Treatment. Ice cap on abdomen, liquid diet, hot vaginal douches three times daily; calomel in tenth grain doses till one grain was taken, then saline enemata. The head of the bed was elevated. Her bowels moved thoroughly next day, but temperature and pulse grew steadily worse. She became chilly at times and hot at others. On the third day after I saw her, she complained of rectal pain. Upon examination of the lower bowel, a hard, sensitive mass, anterior to the rectum, corresponding to the cul-de-sac of Douglas was felt. An abscess was diagnosticated, operation advised, and refused. For the next three days the symptoms gradually subsided only to recur on the eighth of April. She became chilly, her temperature rose to 103° F., and pulse became weak and thready. Her abdominal pain increased as did the rectal tenesmus. On vaginal examination the mass was distinctly felt in the posterior fornix, but was soft and boggy. Permission was granted for incision and drainage of the abscess only. She was removed to the Northwestern General Hospital, the abscess evacuated with a posterior vaginal incision, the cavity packed with iodoform gauze and after two weeks' drainage, the incision allowed to heal and she returned home. She was placed upon iron and strychnine sulphate with a generous diet. Ichthyol tampons (fifty per cent. in glycerin) were used every third day. On May 9th, contrary to my advice, patient resumed her work. On May 24th, she had a severe mental shock, following which she lost the use of her limbs and was carried to bed.

Physical examination then showed that patient was laboring under intense mental excitement.

Eyes: O. D., pupil dilated, reacted to light and accommodation; visual field contracted till vision was nil. Conjunctival sac anæsthetic. O. S., pupil dilated, reacts properly, visual field normal. Conjunctiva excessively sensitive.

Cutaneous symptoms: Patient was unable to feel a needle in the right leg and the right half of the abdomen. The left leg was over sensitive as was the left half of the belly. The right arm was anæsthetic except for several areas of over sensitive areas over the deltoid and over the anticubital space. The right side of face was anæsthetic while the left side was the reverse. Mammary and vertebral tenderness. Romberg's sign was present. Both knee reflexes were decidedly increased. No ankle clonus; no Babinski. She could move her legs in bed, but could not stand on them. Right hand grip was very weak. No bladder or bowel symptoms.

Diagnosis: Hysteria.

Treatment consisted in assuring the patient that all her functions would most certainly be regained and treated along the line of suggestion. Electricity, massage, salt rubs were given. Sodium bromide in twenty grain doses every few hours, the glycerophosphates of calcium and sodium and a very generous diet comprised the rest of the treatment. The improvement was at first slow, and the patient had constantly to be reassured that she was recovering. The eye condition persisted longest, lasting until June 18th, when all the symptoms cleared up. She has now gained twenty pounds and feels well in every way. I feel reasonably sure that had she persisted in following out her postoperative treatment as I outlined it to her, instead of immediately returning to her work, her nervous system would have withstood the shock much better than it did.

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A CASE OF HEPATIC SYPHILIS.

By Milton Goldsmith, M. D.,
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Syphilitic disease of the liver, as evidenced by statistics (Osler's *Modern Medicine*) is of rather infrequent occurrence:. During eighteen years, at the Johns Hopkins Hospital, but thirty cases were diagnosticated as such. Flexner, in an analysis of over 5,000 autopsies, reports 188 cases of hepatic syphilis, divided into forty-two cases with interstitial changes, twenty-two of gummata, sixteen of perihepatitis, seventy of amyloid degeneration, and thirty-eight cases showing syphilitic scars. In 11,629 autopsies at St. George's Hospital, thirty-seven cases of gummata and twenty-seven of cicatrices were found.

These figures refer, of course, to the adult cases: In the congenital variety, the incidence is much higher, constituting from forty to seventy per cent. of infants born prematurely or dying shortly after birth.

Anatomically, the cases may be divided as follows: 1. Diffuse interstitial hepatitis, common in the congenital variety. The liver is enlarged, very firm, grayish yellow or flint colored. 2. Gummata: large or small opaque white tumors, firm or solid, the cut surface resembling a section of a potato, and much denser and harder than the ordinary cheesy matter of tuberculosis; surrounding the gumma is a definite zone or capsule of connective tissue and outside of this, a zone of translucent tissue, representing the small celled infiltration of the advancing syphilitic process. In fresh gummata the three zones are easily recognized; in old processes, the translucent zone is absent. Gummata vary in size from 3 to 4 mm., in diameter to twice the size of a fist, and in number from one to ten or twelve. They may undergo retrogressive changes, disappearing completely, and leaving only a fibrous scar; softening may occur in the centre, either from the breaking down of necrotic tissue or occasionally from septic infection. Or, calcification may occur, and the rare instances of diffuse calcification in wide areas of the liver may have been of this origin.

3. Scarred or botyroid liver, of which there are several varieties: a. Small puckered depressions, with perihepatitis but with little deformity. b. One or both lobes may be divided by bands of fibrous tissue, radiating from the hilus or following the branches of the portal vein. In extreme cases the whole organ may be lobulated (botyroid) or large areas may be completely isolated, or the lobe may be made up of three or four sections united by flat bands of connective tissue.

SYMPTOMATOLOGY.

In the congenital form, we have an enlarged abdomen, due to enlargement of the liver and spleen, and usually associated with other signs of lues.

A second and vastly more interesting variety is that in which the manifestation of the disease is extremely late. A child is born healthy and remains so for a number of years, then develops obscure abdominal symptoms which finally crystallize into the picture of hepatic syphilis. (A very interesting case is Cheny's, of San Francisco, which appeared in the *Journal of the American Medical Association,* March 26, 1910.)

The clinical features in adults are divided by Rolleston as follows: 1. With features of hypertrophic cirrhosis: pains in the hepatic region, slight jaundice, the liver much enlarged, usually tender and slightly irregular, but may be quite smooth. 2. Resembling atrophic cirrhosis: with recurrent ascites, enlarged spleen, and all the usual features of hepatic dropsy. The portal obstruction may be due to gummata pressing on the portal vein or its branches or it may follow cicatrization. 3. Hepatic tumors. There may be large tumors in either right or left lobe or multiple nodules on the surface. These are usually painless and may remain so for months. Such tumors may remain two or three years and this slow growth with a coincident enlargement of the spleen and the very slight cachexia, constitute important diagnostic points against carcinoma. 4. Amyloid liver. This is usually found in old cases with bone necrosis and extensive gummatous disease. The organ is greatly enlarged, the spleen likewise, albuminuria and dropsy are present and the features are mostly those of renal disease. Rolleston reports one case in which the liver weighed eight and a half pounds. 5. Cases resembling liver abscess. There are enlargement, fever, slight jaundice, tenderness, and if a tumor is present, the suspicion of an abscess is very great. Sometimes a gumma becomes secondarily infected and a real abscess results. 6. Cases in which great enlargement of the spleen and a diminished liver area suggest Banti's disease.

The case which I wish to report does not correspond well with any of these clinical types. It resembles that of hypertrophic cirrhosis more than any of the others and yet differs from it in many important aspects.

Case. The patient, a white male, age thirty-four, consulted me September 18, 1909, with the following anamnesis:

Up to August 1st of that year he had been a healthy, jolly, care free fellow with a large capacity for his work (traveling salesman), and scarcely knowing what it meant to feel sick. About that time (seven weeks before) he began to feel heavy and tired, his head was not as light and clear for work as usual, he had a disagreeable taste in his mouth, and thought his breath smelled badly. A few days later, he noticed his skin becoming yellow. His business taking him to Detroit, he consulted a physician there; was told that he had jaundice and given several courses of calomel and salts. Instead of improving, the jaundice deepened, he began to lose weight, and while he had no pain, the sense of general discomfort and disagreeable digestive symptoms increased. He was advised to go to French Lick Springs, where in spite of active purgation by Pluto water for three weeks, all the symptoms increased and the completely obstructive character of the jaundice was shown by the appearance of clay colored stools. After five weeks diarrhœa set in and with it biliary coloring matter reappeared in the stools. During this time, accompanying these symptoms, there was a steady loss of weight, amounting to fifty pounds, or an average of a pound per day. At no time had there been any abdominal pain.

Examination. The patient was extremely jaundiced, so much so that he attracted attention when in street cars or other public places. In addition to the dark olive hue, an element of bronzing was associated. Tongue was heavily coated, breath very foul. The face showed marked emaciation, the limbs less so, while the abdomen, in spite of the great loss of weight, still had a fairly well preserved panniculus adiposa. Liver dullness extended from the top of the fifth rib to two fingers breadth below the costal margin. The edge could be made out as greatly thickened, hard and not tender. The inferior surface seemed to project downward and forward, as though the body of the organ was greatly thickened. This feature was not limited to any definite area or areas but was characteristic of the entire viscus, so much as could be palpated through the still thick abdominal wall. The spleen was not enlarged, nor was there enlargement of the superficial veins or lymphatics. There was neither ascites nor œdema, and nothing abnormal was found in the thoracic organs. The urine was dark with biliary pigments, and contained a large number of bile stained hyaline and pale granular casts; no albumin, sugar, or indican. Blood examination showed hæmoglobin, seventy-five per cent.; red blood curpuscles, 4,144,000; white blood corpuscles, 11,000. With a loss of weight of fifty pounds and undoubtedly some affection of the liver as part of the pathology, the presence of an additional pancreatic involvement naturally suggested itself. The stools were described as occurring six to ten times in twenty-four hours, the color of mustard and appearing in small pieces about the size of very coarse shavings. The patient persistently refused to bring a specimen for examination, so it is impossible to report further upon the stools. The urine was examined twice for the Cammidge reaction and each time found positive. While this question, unfortunately could not be definitely settled, I believe the great loss of weight, the diarrhœa, bronzing, and positive Cammidge reaction constituted at least highly presumptive evidence of associated involvement of the pancreas.

In reviewing the previous medical history, the only fact of importance elicited was that he had contracted syphilis nine years previously and for each of the five succeeding years had taken a course of rubs (three weeks) at Hot Springs, with treatment at home with potassium iodide during the remaining part of each year. At no time, during the first five years, had he been longer than three months without treatment. To the best of his knowledge he had never had symptoms after his first month at Hot Springs.

With a previous history of syphilis, one naturally suspects any subsequent condition as of specific origin, but here, where the treatment had been prolonged and thorough beyond that usually found sufficient for a cure, together with the rapid development of symptoms, great loss of weight, and absence of splenic enlargement, the probabilities of malignancy seemed far greater than the syphilitic.

In looking over the rest of the body for further signs of either one or the other condition, a small perforation in the septum nasi was found. This had not been suspected as the external appearance of the nose was perfectly normal. Further questioning developed that two years before, he had suffered from nasal catarrh and that the attending physician had skilfully and easily removed a piece of bone from his nose. He was not told of the possible relation between this nasal condition and his former infection, although he was given potassium iodide in large doses again.

The previous line of reasoning now seemed less tangible; a luetic infection which two years after the completion of a five years thorough course of treatment, presented a gumma of the nasal septum, was probably of more than the usual virulence and could quite readily manifest itself a third time two years later.

Active antiluetic treatment was begun. In about two weeks the first sign of improvement was noted in a cessation of diarrhœa, a slight decrease in the quantity of bile in the urine, and in the number of casts. By the end of another week the urine was still lighter colored, the casts fewer, jaundice possibly a little less, the patient four pounds heavier and feeling more like himself, as he expressed it, than at any time since his illness began.

He left the city then to make a business trip to the far west and did not return for three months, having kept up treatment approximately one third of that time. He had regained forty pounds, jaundice was entirely gone, he was free from symptoms, and felt perfectly well. The liver border reached one finger's breadth below the ribs, was much thinner than before but still decidedly thicker than normal. The urine was normal.

In considering the probable pathological state present in this patient, the verdict will depend somewhat upon one's opinion as to whether the pancreas was involved or not. If it was, an additional syphilitic process in that organ, most likely a gumma, would be sufficient explanation.

If the morbid anatomy was confined to the liver, there existed probably one large or numerous small gummata, causing pressure upon the common bile duct and to produce pancreatic symptoms one point of pressure must have been near the Papilla of Vater.

In addition to the obstruction of the large ducts, from pressure, a general cholongitis was quite likely associated.

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LETTER FROM LONDON.

A Discussion on Endometritis.—Syphilis and Affections of the Ear.—A Case under the Workmen's Compensation Act.

London, *November 23, 1910.*

At a recent meeting of the Obstetrical and Gynæcological section of the Royal Society of Medicine Dr. Archibald Donald and Dr. W. Fletcher Shaw presented an interesting paper on the symptoms and treatment of chronic endometritis, with special reference to the Results of Curetting. Endometritis, they said, was a name used to denote a class of cases of which the commoner symptoms were menorrhagia, metrorrhagia, leucorrhœa, dysmenorrhœa, and pain in the lower abdomen associated with a moderately enlarged uterus which was tender on palpation. Two groups of cases were included under the name. In one an inflammatory change seemed possible; in the other any inflammation of a septic or specific origin seemed out of the question.. So far, little help had been forthcoming from the pathologist as to the changes in the endometrium which were associated with the symptoms. The name "chronic endometritis" was used as a matter of convenience, though real inflammation of a chronic kind was probably rare. The objects of the inquiry were to ascertain the results of curetting and a comparison of the results in the different types of case, and, further, to find out the relative frequency of the various symptoms and the result of treatment of each individual symptom. The clinical material consisted of 267 cases (hospital and private) of uncomplicated chronic endometritis. Notes had been taken before treatment in all these cases, and the later condition of the patient was ascertained by written replies to printed questions. In all cases at least twelve months had elapsed since the operation. An analysis of the symptoms and their relative frequency showed that menorrhagia, dysmenorrhœa, and leucorrhœa were most frequent in all cases, menorrhagia and leucorrhœa being most frequent in women who had had children and dysmenorrhœa in nulliparæ and virgins. As regarded the position of the uterus, it was found that anteflexion was twice as common as retroflexion in virgins, while in women who had borne children these conditions were reversed. As to the effects of treatment, the general result was that, of the 267 patients, 230 were relieved and thirty-seven were not relieved. The large majority did not obtain the full benefit until some months after the operation. In dysmenorrhœa the results were very good and went to confirm the belief that this symptom was often caused by some abnormal condition of the endometrium. Leucorrhœa was not quite so amenable to treatment, although the results were fairly good. Attention was directed to the point that the leucorrhœal discharge in the cases under consideration was always of uterine and not of vaginal origin. For the chronic abdominal pain and also for metrorrhagia the treatment was very successful. Some observations had been made on the position of the uterus, and the results of curetting alone in cases in which the uterus was retroflexed or retroverted were found to be rather better than in the cases in which the uterus was anteflexed or anteverted.. The effect of curetting in cases of sterility was distinctly good; in nearly one-third of the cases pregnancy followed within a comparatively short period.

At a meeting of the Otological Section a discussion took place on Syphilis in relation to Otology. Mr. Arthur H. Cheatle, president of the section, opened the discussion. He divided the cases into those due to congenital and those due to acquired syphilis, and then proceeded to subdivide them according to whether the external ear, the middle ear tract, or the perceptive portion of the ear was involved. In speaking of the congenital cases he laid special stress on the importance of Wassermann's test for the diagnosis, and in reference to the treatment he pointed out that he had generally found the usual antisyphilitic remedies useless, but hoped that better results might be obtained from Ehrlich's "606." He also mentioned that in these cases he had obtained great benefit from the use of blisters applied to the mastoid. In dealing with cases of middle ear deafness in acquired syphilis he laid great emphasis on the importance of examining the nasopharynx for gummata and also pointed out the difficulty of exactly localizing the seat of the lesion when the perceptive portion of the ear was involved, owing to the absence of post mortem examinations in such cases.

Dr. Urban Pritchard stated that he had seen ear symptoms in congenital syphilis come on quite late in life. He had had excellent results from blistering. In regard to acquired syphilis, he had been struck with the infrequency of Eustachian deafness in syphilitic pharyngitis, and in cases of secondary or tertiary affections of the meatus he pointed out that it was very easy to make a mistake in thinking that the condition was epithelioma.

Mr. A. L. Whitehead, of Leeds, stated that as a point of diagnosis he had always regarded the chronic painless effusion in the knee joint as a valuable sign. With regard to ulceration of the nose and nasopharynx in congenital conditions, he did not think this was infrequent. He thought that the point was not sufficiently emphasized that in congenital syphilis there might be double lesions. With regard to condylomata in the acquired condition, he agreed with Mr. West as to the pain that was present, and pointed out that, though intractable, as a rule they healed without causing contraction.

Mr. J. E. R. McDonagh did not think one could gauge the effect of treatment in congenital syphilis, because, irrespective of treatment, congenital syphilis tended to give a positive Wassermann reaction throughout life, and that was not altered however much mercury was given. A positive reaction should not be taken as an indication that the "606" had no effect on congenital syphilis. He had treated only one case of ear trouble with "606," and that was an acquired case in which the patient had a lesion of the ninth nerve on one side. Hearing was certainly improved after the injection. With regard to eye trouble after injection, Ehrlich had had 12,000 reports without any eye trouble. He himself had injected eighty-two patients, and there had been no eye trouble. Two of them had optic neuritis, but it cleared up after the injection.

An interesting case under the Workmen's Compensation Act was heard at the Liverpool county court recently. An engine driver claimed £1 a week from the London and Northwestern Railway Co. for total incapacity due, he alleged, to an accident in August, 1909. The case was adjourned for a report from Mr. C. H. B. Shears, the ophthalmic referee in Liverpool under the act. The applicant, who was over sixty years of age, was driving a train when he was struck in the right eye by a hot cinder or spark from a passing engine. It was alleged that in the result the vision of both eyes had been seriously impaired with consequent total incapacity from following his employment as an engine driver. The company paid him £1 a week from the date of the accident to May last, when they stopped the allowance on the ground that the effects of the injury had ceased. Cataract was observed in both eyes in May, and the eye specialists on behalf of the company attributed this to the applicant's age and natural causes and not, as suggested by the specialists on behalf of the applicant, to the accident. The medical referee in his report stated that he found slight but definite signs of cataract in the left eye and marked signs of cataract in the right eye. In each case he was of opinion that the cataract was the result of advancing years and not in any way the result of the accident. He was of opinion that the applicant's present sight would not enable him to pass the vision tests required by the railway company for their engine drivers, but he still had very fair sight in the right eye and good sight in the left, and would be capable of doing work in other departments of the railway if that were available to him. Judgment was given for the company.

Therapeutical Notes.

Four Prescriptions for Alopecia Furfuracea.—In the course of an article contributed to the *Journal of the American Medical Association* for September 24, 1910, Charles J. White says that in the treatment of alopecia furfuracea he practically confines himself to the following four prescriptions:

I.

℞ Salicylic acid, ... }
Precipitated sulphur, } .... āā ℥ss;
Petrolatum, ... ℥i.

M. et Sig.: Ointment. Apply at night. Shampoo with a simple soap the following morning.

II.

℞ Pilocarpine nitrate, ... gr. i;
Quinine sulphate, ... gr. x;
Tincture of cantharides, }
Tincture of capsicum, ... } .... āā ʒiii;
Alcohol, 70 per cent., ... ad ℥viii.

M. et Sig.: Wash for scalp. Apply in the morning.

III.

℞ Tannic acid, ... gr. xxxv;
Chloral hydrate, ... gr. xxvii;
Tartaric acid, ... gr. xxx;
Castor oil, ... ♏xv;
Alcohol, 70 per cent., ... ℥vi.

M. et Sig.: Wash for scalp. Apply in the morning.

IV.

℞ Mercuric chloride, ... gr. iv;
Resorcin monoacetate, ... ʒii;
Spirit of formic acid, ... ℥i;
Castor oil, ... ℥i to ℥iii;
Alcohol, 70 per cent., ... ad ℥viii.

M. et Sig.: Wash for scalp (poison). Apply two teaspoonfuls in the morning.

As regards efficacy No. 4 holds first place in the author's estimation, and the chloral hydrate wash (No. 3) second.

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NEW YORK, SATURDAY, DECEMBER 10, 1910.

AN UNFOUNDED POPULAR ANTIPATHY.

The fear of infectious disease is overpowering with a great many persons, perhaps with a majority, especially in rural communities. As a consequence of this dread, it is a very common occurrence for the inhabitants of a locality to show strenuous opposition to the establishment of a sanatorium in the neighborhood, and this attitude on their part often interferes materially if not fatally with public spirited attempts to secure advantageous situations for sanatoria that are urgently needed in the interests of the general welfare. The adverse influence brought to bear has more than once been felt in cases in which it was sought to establish suitable retreats for consumptives.

This hostile feeling is probably most pronounced in instances in which it is found necessary to set up a temporary "pest house" on account of an outbreak of smallpox. The fact is not to be wondered at, for variola is not only loathsome and deadly, but of such comparatively rare occurrence since the practice of vaccination became general that the terrors of imagination are added to those which are justified by knowledge. The result is that a remote and lonely locality within more or less difficult reach of an abandoned road is settled upon, a rough shack is hastily thrown together, a few beds and chairs of the rudest kind are thrust into it, one or two immunes are secured to do the nursing, and dealers in provisions are warned not to approach the place save with such precautions as would be taken by a spy in case of warfare; but there is no trouble in providing for due medical attendance, for physicians are fearless in the presence of pestilence. We do not pretend that doctors are more courageous in general than the rest of mankind, but in the matter of infective disease they abide by their convictions and do not suffer alarm to get the better of their reason.

Though in a lesser degree, fright in the presence of other infective diseases so takes possession of many people that they appear to have lost the power of reasoning about them, and some of them look upon every place of resort for the sick, even a general hospital, as a pest house, as something which threatens themselves and their families. They feel an impulse to flee from scarlet fever, diphtheria, and measles, and nowadays even from tuberculous disease. It is to be feared that boards of health have unintentionally intensified this feeling of fear by carrying to extremes certain precautionary measures which must be acknowledged to be essentially the rational manifestation of the struggle against the spread of disease. It seems to us that in some respects the rigor of these measures might be relaxed without impairing the general effectiveness of sanitary efforts, and, in particular, we might well refrain from stigmatizing a household in which there may chance to be a case of infective disease.

A TRIUMPH OF EXPERIMENTAL MEDICINE.

Whether or not Ehrlich's "606" proves to be a wonderful specific, the masterly method in which it was originated will forever rank as one of the great achievements of experimental medicine. In a monograph just published,[1] Ehrlich gives an historical review of the work leading up to the employment of dioxydiamidoarsenobenzol in the treatment of syphilis, and shows how step followed step in logical fashion until the goal was reached. Those who have followed Ehrlich's work are familiar with the fact that one of his earliest investigations concerned the relations existing between the chemical constitution of drugs and their pharmacological action; and even during the great epoch of serological studies we find him at work on this, his pet subject. In the employment of chemical substances in combating infectious diseases he made it clear that success could be attained only if the chemical affinity of the substance for the infecting parasite bore certain relations to the affinity for the infected body. All his energies were directed to devising substances having marked antiparasitic qualities while being still relatively little poisonous for the infected host.

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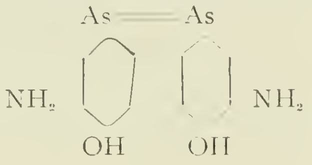
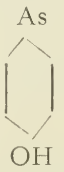
[1] Die experimentelle Chemotherapie der Spirillosen (Syphilis, Rückfallfieber, Hühnerspirillose, Frambösie).

What particularly characterizes Ehrlich's chemotherapeutic researches is the logical way in which various substances are tried. Thus, in the studies on trypanosomes it was found that the number of different types of antiparasitics was small. There was the group of arsenicals, arsenous acid, atoxyl, arsacetin, arsenophenylglycin, and finally "606." Next there were certain azo dyes, among them trypan red, trypan blue, and trypan violet. Finally there were certain basic triphenylmethane dyes, among them parafuchsine, methyl violet, pyronine, etc. With each of these classes of substances careful experimental therapeutic studies were made on animals, homologues and derivatives of almost every variety being examined, and the pharmacological action compared with the chemical constitution. Only one who knows how laborious the preparation of such complex derivatives is can form any idea of the immense labor involved in preparing and carefully testing all these substances. Arsenophenylglycin bore the serial laboratory number 418, and following this almost two hundred complex derivatives of phenylarsenic were prepared and examined.

Although "606" can be prepared from atoxyl, there is really no close relationship between the two substances, any more than aniline and fuchsine are related because fuchsine can be made from aniline. Ehrlich emphasizes this fact because, since the administration of atoxyl and its derivatives, arsacetin and orsudan, has in some cases been followed by blindness, the fear has been expressed that the same might happen with "606." Happily, clinical experience has shown that this is not to be feared, thus showing that the two substances are not really related. The graphic formula of "606" is extremely simple. It will be observed that the arsenic is trivalent. This is of the greatest importance in so far as the spirillocidal action is concerned. Ehrlich has found that the corresponding combination containing pentavalent arsenic, namely, paraoxyamidophenylarsinic acid, while but slightly toxic, is not certainly effective in doses that can be tolerated.



Another important factor concerning the constitution of "606" is the hydroxyl group in the para position. It can readily be shown that arsenophenol possesses marked spirillocidal properties. Unfortunately, however, it is very difficult to prepare in pure form, and it is very toxic. Moreover, when it is dissolved it very readily oxidizes, forming paraoxyphenylarsenoxide, which possesses a great tendency to cause inflammation. Ehrlich thereupon sought to effect substitutions whereby he could reduce the total toxicity, increase the spirillocidal power, and also increase the stability of the combination. Guided by previous pharmacological studies, he tried a number of compounds in which substitutions were made in the ortho position. Methyl and nitro groups were found to decrease the therapeutic value of the compounds; the halogens, on the other hand, increased the therapeutic value. After further experimenting, however, the halogen substitutions were dropped when the extraordinary therapeutic effect of the amido substitution in the ortho position to the hydroxyl group was discovered.



THE IMPONDERABLES AS REMEDIES.

In reflecting upon the progress of medicine within recent years one can hardly fail to be struck with the heightened part played in therapeutics by various agencies that are not of a material nature—such as the physicist would class among the imponderables. Some of them are not new to us, though they have but lately been found to be possessed of activities formerly unsuspected. These are light, heat, and electricity, known since the world began. For ages they have all been looked upon as capable of exerting more or less remedial action, but until recently only in a vague and comparatively unimportant way.

We find now from Finsen's researches that light, properly managed, may be productive of therapeutic effects far more definite than were formerly ascribed to it, and there are many who regard it as one of our very potent agents. Heat has emerged from the poultice and cautery stage as a remedial means, and with the "baking" process we are able to affect many a painful and deformed joint favorably. Electricity has ceased to be referred to in the textbooks as possibly serviceable when all other known remedies have been tried in vain, and it is no longer mentioned except with specifications. Galvanism and faradization are holding their own, but the static machine has come into prominence and the high frequency current of d'Arsonval is credited with producing many wonderful results in very diverse pathological conditions. "Fulguration" may be said to be on trial,

Of the new imponderables, the Röntgen ray has certainly not fallen into disfavor as a remedial agent, though much that was at first hoped for as the result of its employment has not thus far been realized. At least we have stripped it in great measure of its powers for harm, partly by direct defensive devices and partly by modified methods in its use. We believe we are not expecting too much when we look forward to some very decided therapeutic advantages from its continued employment. Meantime, of course, its diagnostic value is not only unimpaired, but heightened from time to time by the use of new accessories.

Radium itself, it is true, is not an imponderable, but its emanations are immaterial, and to them it owes its activity. It is yet too soon to attempt to pronounce upon the capabilities of radium as a remedy, but there are many good observers who believe them to be highly important and who can point to experience which seems to them to justify their belief. We suppose it may safely be said that radium is at the bottom of certain remedial powers generally believed to reside in various natural spring waters, powers that are unaccountable on the basis of their mere chemical—that is, mineral—constituents. If this is not in itself an addition to our resources, it is at least a satisfying hint at a refutation of skepticism with regard to the medicinal value of the mineral springs, and, viewed in that light, it is welcome to those of us who seek to know "the reason why."

UNCONTROLLABLE VOMITING OF PREGNANCY.

The question of uncontrollable vomiting of pregnancy was the subject of a very learned report by Fieux, of Bordeaux, at the Congress of Gynæcology, Obstetrics, and Pædiatry held at Toulouse in September. The author does not believe in an hysterical origin of uncontrollable vomiting, and very properly, because the majority of pregnant women who are afflicted never presented before their pregnancy any symptoms of hysteria. Hysterical vomiting arises only after some mental shock and reaches its maximum at once, or it may persist after a fortuitous attack of vomiting. The idea of vomiting having become fixed in the mind causes the recurrence of the act, but nothing of this sort is met with in the vomiting of pregnancy. The attacks will arise frequently when the woman is unaware of the pregnancy and consequently there is no element of emotion or moral shock present. Then, again, the progress is entirely different. The vomiting of pregnancy may result in death, an outcome which has never been observed in the hysterical type. And, what is more, many neuropathic women never vomit unless they are pregnant. Consequently there are other factors besides the neuropathic state which enter into play.

Other types of vomiting which may occur during the progress of a disease of the nervous system or the digestive tract should be eliminated, such as the vomiting of locomotor ataxia, meningeal or peritoneal tuberculous disease, intestinal occlusion, etc. When these pathological processes have been eliminated, also certain genital anomalies which may exaggerate the acuity of the vomiting, only one cause of the vomiting is left, namely, an intoxication. It is the presence of the living ovum which keeps up the toxæmia, because the removal or death of the fœtus results in an immediate cure.

Fieux and Mauria have demonstrated that there exists in the serum of pregnant women during the first months a specific antibody of the yellow chorial villosities. This antibody, which has been made evident with great distinctness during the second or third month of pregnancy, becomes attenuated during the fourth and disappears during the following months. There is quite a striking parallel between the life of the corpus luteum and this serum reaction, so that it may be asked whether the corpus luteum does not preside over the equilibrium between the toxæmia and the defense of the organism.

Although the nature of the toxæmia is imperfectly understood, the essential point is that we now know what we may do medically. The diet should be light and of easy digestion, but a milk diet should be avoided, as it may increase the gastrointestinal intoxication by putrid transformation of the casein. Large quantities of water should be given, and if the stomach continues to reject it, dehydration is to be overcome by injections of normal salt solution either subcutaneously or by the rectum. If the vomiting continues, the question arises as to when pregnancy should be interrupted. The loss of flesh gives little information, and one should count more upon the progressive decrease in the urinary excretion. The latter, however, is not a decisive point, and undoubtedly the best guide is the condition of the pulse. As soon as it rises above 100 and remains there, interference is proper. It is true that patients have had a higher pulse than this and, nevertheless, have been able to reach the end of their pregnancy, but Fieux is of the opinion that it is dangerous practice to wait.

THE ITINERANT VENDOR DANGER.

The decision recently rendered by the Supreme Court of the State of Illinois upholding the constitutionality of that clause of the medical practice act of the State which refers to the itinerant vendors of medicine will be welcomed by all physicians as a just and proper decision. The sale of medicines by itinerant vendors has reached very large proportions in the rural sections of the Middle West. There are several concerns engaged in the business which operate hundreds of wagons. The peddlers who are sent out with these wagons are, of course, not qualified medical men, but they do not hesitate to give medical advice, of course invariably recommending the compounds which they are employed to sell. A rigid enforcement of the law in Illinois will undoubtedly have a good moral effect in adjacent States, and it is to be hoped that the authorities in other States will follow the precedent set by the officials of the Board of Health of the State of Illinois in vigorously prosecuting all offenders against itinerant vendor laws.

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Obituary.

CHRISTIAN ARCHIBALD HERTER, M. D., of New York.

Dr. Herter died on Monday, December 5th, in the forty-sixth year of his age, of pneumonia. He was a graduate of the College of Physicians and Surgeons, of the class of 1885. At the time of his death he was a consulting physician to the City Hospital and one of the physicians to the hospital of the Rockefeller Institute. Dr. Herter devoted his life to research; in his own private laboratories and elsewhere he conducted important investigations of physiological and pathological problems, particularly of those connected with metabolism, and his published communications on such subjects are everywhere recognized as among the most substantial of contemporary contributions to our literature. He was highly esteemed as a man no less than as a research worker.

JOHN C. DA COSTA, M. D., of Philadelphia.

Dr. Da Costa died on Tuesday, December 6th, after a short illness, at the age of seventy-six. He began his career in medicine rather late in life, being graduated by the Jefferson Medical College in 1878. He became a gynæcologist of note, and in that capacity he was connected with the Jefferson Hospital. Dr. Da Costa was a man of fine presence and one highly esteemed in the profession.

JOHN CUMMINGS MUNRO, M. D., of Boston.

Dr. Munro died on Tuesday, December 6th, aged fifty-two years. He was a surgeon of eminence, said to be of the line of the famous Scotch anatomists of the same family name. He was a member of numerous scientific and social organizations and was highly respected in the medical profession and in the community.

News Items.

Changes of Address.—Dr. S. Kingolsky, to Suite 446, Metropolitan Building, Sixteenth Street and Court Place, Denver, Colo.

Dr. C. W. Somerville, to 310 Empire Building, Thirteenth and Walnut Streets, Philadelphia.

More Typhoid Fever at Annapolis.—Three new cases of typhoid fever among the midshipmen at Annapolis were reported on December 4th.

Dr. De Forest Willard's Successor.—Dr. George G. Davis will be appointed professor of orthopædic surgery in the University of Pennsylvania Medical School, succeeding the late Dr. De Forest Willard.

Psychotherapy in Organic Disease was the subject of the address delivered by Dr. James J. Walsh, at the annual meeting of the Eastern Medical Society of the City of New York, held on Friday evening, December 9th.

The Montreal Medical Journal to be Discontinued.—The December number will be the last issue of the *Montreal Medical Journal,* in accordance with an agreement made recently with the Canadian Medical Association.

The Port Chester, N. Y., Medical Society was organized at Rye recently, with twenty-two members and the following officers: President, Dr. Carl L. Wolff, of Rye; vice-president, Dr. John F. White; secretary, Dr. William J. Sheehan; treasurer, Dr. H. A. Bayles.

Toronto Hospital Destroyed by Fire.—The Toronto Free Hospital for Consumptives and several surrounding buildings were destroyed by fire on December 1st. Ninety-two patients, forty of whom were helpless, were removed safely. The loss was about $100,000.

$100,000 Gift to the German Hospital and Dispensary.—Mrs. Anna Woerishoffer's gift of $100,000 to the German Hospital and Dispensary, of New York, has been formally accepted by the board of trustees. It will be used to found a children's ward, which will be called the Dr. Abraham Jacobi Ward.

Professor Castle's Lecture before the Harvey Society, which was to have been delivered on Saturday evening, November 5th, but was postponed on account of a death in the family of Professor Castle, will be delivered on the evening of February 25, 1911. The subject of this lecture is Unit Characters in Heredity.

Record Price for Radium.—The English Radium Institute, of London, has acquired from the mines of the Austrian Ministry of Public Works fifteen grains of radium for medical purposes, for which the sum of $75,000 was paid, equivalent to $5,000 a grain. The purchase money was provided by Sir Ernest Cassel. Only half the amount is to be delivered at once, and the remainder will be turned over as accumulated in three months' time.

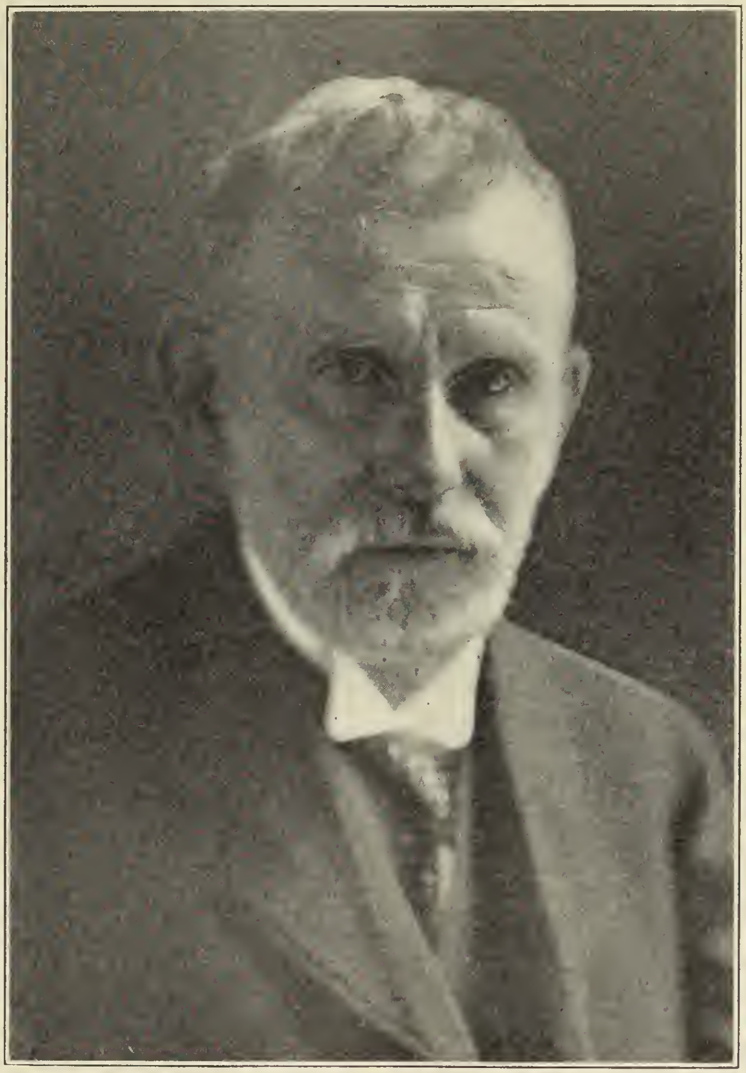
New Buildings for the French Hospital, New York.—The French Hospital, in West Thirty-fourth Street, is making efforts to raise $20,000 so that the erection of an asylum for the aged and a home for the nurses in connection with the hospital may be started. The expenses of construction will amount to $85,000, and of this sum $60,000 was secured at the charity bazaar held last spring in the Metropolitan Opera House. Mr. J. Pierpont Morgan has promised to subscribe $25,000 as soon as the $80,000 mark has been reached.

The Syracuse, N. Y., Academy of Medicine.—At a regular meeting of this academy, held on Tuesday evening, December 6th, the programme included the following papers: The Organic Basis of Neurasthenia, by Dr. John M. Swan, of Watkins; The Borderland of Insanity, by Dr. Charles P. Emerson, of Clifton Springs; Early Manifestations of Dementia Præcox, by Dr. H. G. Locke. The general discussion which followed the reading of these papers was opened by Dr. R. H. Hutchings, of St. Lawrence State Hospital, Ogdensburgh, N. Y.

The Health of the U. S. Navy.—The health of the U. S. Navy was better during the year 1909 than in any other yearly period of the last decade, and the death rate was the lowest ever recorded, according to the annual report of Surgeon-General Stokes to the Secretary of the Navy. The record death rate was five in a thousand. The percentage of sick from disease and injuries during 1909 was 4.019, as compared with a ten year average of 5.218 From disease only in 1909 the percentage of sick was 3.952, which is lower than any year since the Spanish-American war.

The Somerville, Mass., Medical Society.—The annual meeting of this society was held on Thursday evening, December 1st, and officers for the ensuing year elected as follows: Dr. F. L. Morse, president; Dr. R. F. Gilson, vice-president, and Dr. T. N. Stephens, secretary and treasurer. At the banquet, which followed the business meeting, Dr. F. L. Morse, the newly elected president, was toastmaster.

The Milk Conference.—Professor William T. Sedgewick, of the Massachusetts Institute of Technology, presided at the Friday evening session of this conference, which was held in New York, on Friday and Saturday, December 2d and 3d. He delivered an address on The Milk Problem in America Today. The programme also included the following papers: The Relation of the Purity of Milk Products to the Public Health, by Dr. W. A. Evans, commissioner of health, Chicago, Ill.; The Bearing of Communicable Diseases on the Control of Public Milk Supplies, by Dr. J. W. Kerr, assistant surgeon general, United States Public Health and Marine Hospital Service; Bacterial Contamination of Milk as a Cause of Disease, by Dr. William H. Park, director of the Research Laboratory of the New York Health Department; The Real Need for Pasteurization, by Dr. E. C. Schroeder, superintendent of the Experiment Station of the Bureau of Animal Industry, United States Department of Agriculture; Milk Supplies of Villages, by Dr. J. W. LeSeur, health officer, Batavia, N. Y. Among those who contributed to Saturday's programme were Dr. L. L. Van Slyke, of Geneva, N. Y.; Dr. Ernst J. Lederle, health commissioner of New York; Dr. John F. Anderson, of the United States Public Health and Marine Hospital Service; Health Officer Amyot, of Toronto, and Lyman C. Root, of Stamford, Conn. The chief speaker on Saturday evening was Deputy Attorney General J. B. Coleman, whose subject was The State Regulation of Milk Prices. Among others who spoke were Dr. Henry L. Coit, president of the American Association of Medical Milk Commissions; George M. Whitaker, acting chief, dairy division, United States Department of Agriculture; Dr. Charles E. North, of the New York milk committee, and Dr. G. Lloyd Magruder, of Washington, D. C.



PAUL EHRLICH, M.D.
(By permission of McClure's Magazine.)

New York Hospitals Appeal for Aid.—The trustees of the Hospital Saturday and Sunday Association have issued a call for $200,000, in aid of the free work done for the sick poor of the city by forty-five hospitals. While this is double what the association has been raising, it is less than one-sixth of the $1,300,000 which the hospitals must raise by voluntary gifts, in addition to their income from invested funds and city appropriations and from pay patients, to meet actual expenses.

St. Paul's New Home for Crippled and Deformed Children.—The new $60,000 home for crippled and deformed children, adjoining Lake Phalen, is completed, and the installment of the equipment is all that remains to be done before accommodations are supplied by the State for the housing of one hundred unfortunate youngsters. It is expected that by January 1, 1911, the institution will be ready for occupancy, so that the crippled children being cared for in the city hospital can be removed to the home. Fresh air, sanitary quarters, the comforts of a good home, a common school education and instruction in a trade are the advantages offered by the new State institution. The building, as it now stands, has accommodations for one hundred. Future appropriations from the State are looked forward to, which will permit of the construction of another building where crippled adults may be cared for. The culmination of the idea of furnishing a home for children afflicted by any disease that cripples them is due, in large part, to the efforts of Senator W. W. Dunn, who was instrumental in securing the passage of a bill in the legislature for the appropriation of $55,000 for the purpose. This fund, added to a donation of $5,000, made up the amount which was spent on the building. Another $6,300 was used to purchase twenty-three acres of land adjoining the site. The city also donated the site, embracing four acres. The $11,300 was the gift of the city. A further donation was made by turning over to the institution the city hospital building formerly used for crippled children and known as the children's building. The work is under the direction of Dr. Arthur J. Gillette, professor of orthopædic surgery in the College of Medicine and Surgery, University of Minnesota.

Personal.—Dr. Samuel A. Savitz, formerly surgeon to the U. S. Coast and Geodetic Survey, has located at 1541 North Seventh Street, Philadelphia.

Dr. Judson Daland, of Philadelphia, read a paper entitled Ehrlich's Remedy from the Pharmacist's Standpoint, at a meeting of the Philadelphia Branch, American Pharmaceutical Association, held Tuesday evening, December 6th.

Dr. Charles K. Mills, professor of nervous diseases at the University of Pennsylvania, and Dr. William G. Spiller, professor of neuropathology at the same institution, have been appointed corresponding members of the Gesellschaft der Deutschen Nervenärzte.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 3, 1910:

	November 26th.		December 3d.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	499	151	634	139
Diphtheria and croup	211	29	264	24
Measles	120	4	142	4
Scarlet fever	160	5	226	10
Smallpox	..	..	..	..
Varicella	94	..	135	..
Typhoid fever	64	5	53	15
Whooping cough	24	7	42	4
Cerebrospinal meningitis	2	4	3	10
Total	1,174	205	1,499	306

The Health of Philadelphia.—During the week ending November 12, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 18 cases, 3 deaths; scarlet fever, 52 cases, 2 deaths; chickenpox, 18 cases, 0 deaths; diphtheria, 81 cases, 8 deaths; measles, 26 cases, 0 deaths; whooping cough, 10 cases, 3 deaths; pulmonary tuberculosis, 109 cases, 43 deaths; pneumonia, 34 cases, 46 deaths; erysipelas, 6 cases, 0 deaths; mumps, 7 cases, 0 deaths; infantile paralysis, 5 cases, 1 death; trachoma, 1 case, 0 deaths. There were 4 deaths from tuberculosis other than that of the lungs, 25 from diarrhœal diseases under two years of age, and 2 from puerperal fever. There were 39 stillbirths: 21 males and 18 females. The deaths of children under five years of age numbered 107, of whom 76 were under one year of age. The deaths from all causes, exclusive of stillbirths, numbered 469, in an estimated population of 1,598,400, corresponding to an annual death rate of 15.26 in a thousand of population.

Vital Statistics of New York.—During the week ending November 26, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,284, corresponding to an annual death rate of 13.95 in a thousand of population, as compared with a rate of 15.27 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 14.88; the Bronx, 12.11; Brooklyn, 13.15; Queens, 13.74; Richmond, 13.86. There were 107 stillbirths. The deaths of children under five years of age numbered 302, of whom 191 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 37; over five years of age, 45. There were 151 deaths from pulmonary tuberculosis, 109 from pneumonia, 79 from bronchopneumonia, 110 from Bright's disease, 158 from organic heart diseases, and 72 from congenital debility and malformations. There were 9 deaths from suicide, 5 from homicide, and 62 due to accidents. One thousand one hundred and twenty-five marriages and 2,146 births were recorded during the week.

Society Meetings for the Coming Week:

Monday, *December 12th.*—New York Academy of Medicine (Section in Neurology and Psychiatry); Society of Medical Jurisprudence, New York; New York Ophthalmological Society; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association; Williamsburgh Medical Society, Brooklyn, N. Y.

Tuesday, *December 13th.*—New York Academy of Medicine (Section in Public Health); Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Medical Society of the County of Rensselaer, N. Y.; Buffalo Academy of Medicine (Section in Medicine).

Wednesday, *December 14th.*—New York Pathological Society; New York Surgical Society; Medical Society of the Borough of the Bronx, New York; Alumni Association of the City Hospital, New York (annual); Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Richmond, N. Y.

Thursday, *December 15th.*—New York Academy of Medicine; German Medical Society, Brooklyn; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo, N. Y.

Friday, *December 16th.*—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Postgraduate Medical School and Hospital; East Side Microscopical Society; Brooklyn Medical Society.

The Health of Chicago.—During the week ending November 26, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 68 cases, 10 deaths; measles, 48 cases, 0 deaths; smallpox, 0 cases, 0 deaths; whooping cough, 12 cases, 0 deaths, scarlet fever, 139 cases, 7 deaths; diphtheria, 291 cases, 29 deaths; chickenpox, 54 cases, 0 deaths; tuberculosis, 154 cases, 71 deaths; pneumonia, 69 cases, 126 deaths. There were 2 cases of infantile paralysis, and 32 of contagious diseases of minor importance reported, making the total 869, as compared with 784 for the preceding week and 633 for the corresponding week last year. The deaths under two years of age from diarrhœal diseases numbered 42, and there were 28 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 158, of whom 103 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 614, corresponding to an annual death rate of 14.65 in a thousand of population, as compared with a rate of 15.8 for the preceding week and 14.3 for the corresponding period last year.

A Special Appropriation for the Investigation of Epidemic Infantile Paralysis in New York State.—The subject of epidemic infantile paralysis was thoroughly discussed at the Health Officers' Conference recently held in Buffalo, N. Y., and it was the unanimous opinion of those present that the Legislature should grant a special appropriation for a thorough investigation of the causes, and steps to be taken for the prevention of the disease. For the past two or three years infantile paralysis has occurred epidemically over an ever widening territory and with an increasing number of cases. It is estimated by Surgeon-General Wyman that the records of 1910 will show upward of 3,000 cases. Laboratory investigations have been going on for some time past at the Rockefeller Institute for Medical Research in New York city. The State Department of Health now requires all cases to be reported to it on special blanks, and a study will be made of these records; but a field investigation should also be made by house to house inspections in infected districts to ascertain as far as possible the factors which favor the spread of the disease. As a rule epidemic paralysis is a disease of the summer months, but previous history leads one to expect that enough cases will appear from time to time during the winter to carry the disease through the cold season, and that it will break out again with increasing virulence under more favorable climatic conditions next year. It is for this reason that the health officers want the Legislature this winter to provide special funds which will allow the State Department of Health to perfect its plans for a thorough field examination during the height of the epidemic season next year.

Anatomist Wanted for the Army Medical Museum.—The United States Civil Service Commission announces an examination on January 18, 1911, to secure eligibles from which to make certification to fill a vacancy in the position of anatomist (male), at $1,600 per annum, in the Army Medical Museum, Office of the Surgeon General, and vacancies requiring similar qualifications as they may occur, unless it shall be decided in the interest of the service to fill the vacancy by reinstatement, transfer, or promotion. The age limit is twenty years or over on the date of the examination. Men only will be admitted to this examination. It is desired that the person appointed to this position shall be young, in good health, a graduate in medicine, with a thorough knowledge of pathologic histology, pathology, and bacteriology, be capable of making photomicrographs, understand microscopes, surgical instruments and appliances, and be able to prepare, card, and keep in order museum specimens. In accordance with a recent act of Congress an applicant for this examination will be required to be examined in the State or Territory in which he resides and to show in his application that he has been actually domiciled in such State or Territory for at least one year previous to the date of the examination. This examination is open to all citizens of the United States who comply with the requirements. Applicants should at once apply to the United States Civil Service Commission, Washington, D. C., for application and examination Form 1312, and for further information regarding the examination. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 1, 1910.

1. The Doctrine of Vitalism in Medicine, By M. G. Seelig.
2. Present Knowledge of the Laws of Heredity, By W. P. Graves.
3. Postoperative Psychoses, By James G. Mumford.

2. **Heredity.**—Graves gives a review of our present knowledge of the laws of heredity. The laws of heredity generally accepted at the present day, says Graves, are based fundamentally on the theory of germinal continuity. This theory divides the cells of multicellular organisms into two classes called the *somatic* cells and the *germ* cells. The somatic cells constitute all the differentiated cells which make up the structure and various organs of the body. They have only a temporary existence and become disintegrated on the death of the organism. The other class of cells, namely, the germ cells, are the reproductive cells and are represented by ova in the female and spermatozoa in the male. These cells, or the substance which constitutes them, remain undifferentiated throughout the life of the organism. Each one of them carries condensed in its nucleus all the heritable qualities derived through the parent ovum from preceding generations, and under the stimulus of fertilization is capable of passing this inheritance on to succeeding generations. Thus the germ cells possess potentially the quality of immortality. The theory of germinal continuity has been based on facts observed in the development of certain lower organisms. Boveri has shown that the fertilized ovum of the thread worm of the horse divides into two cells, one of which becomes the parent of all the somatic cells, and the other becomes the parent of all the germ cells. Similar observations have been made in a number of worms and insects. But a morphological continuity of the germ cell from ovum to ovum cannot be followed. In order to fill in this gap in our knowledge as to the exact nature of the germ cells in most organisms between birth and maturation, Professor Weismann has devised the hypothesis of the germ plasm, and his views are at present generally accepted. Weismann's theory may be summarized as follows: In each development, a portion of the specific germ plasma which the parent ovum contains is not used up in the formation of the offspring, but is reserved unchanged for the formation of the germinal cells of the following generations. What is actually continuous is the germ plasm "of definite chemical and special molecular constitution." A continuity of germinal cells is now rare; a continuity of intact germinal plasma is constant. This germ plasm has its seat in the nucleus, is extremely complex in structure, but has nevertheless an extreme power of persistence and enormous powers of growth. The germ substance proper must be looked for in the chromatin of the nucleus of the germ cell. The splitting up of the substance of the ovum into a somatic part, which directs the development of the individual, and a propagative part, which reaches the germ cells and there remains inactive, constitutes the theory of the continuity of the germ plasma. Graves thus shows proof that the nucleus is the bearer of heritable characters, citing Boveri, Delaye, and Loeb. In speaking of heredity and variation Graves remarks that the facts of heredity and evolution depend both on the tendency in species of like to beget like, and also on the tendency of species to continual variation. In complex organisms, although the offspring always bears a general resemblance to its parent, the two are never exactly alike. This tendency of the offspring to deviate from its parent forms the basis of evolution. The tendency to resemblance in type is termed the "inertia of species," and may be illustrated in the human species by the persistence of woolly hair in the negro, the slanting eyes of orientals, the oval face of the Eskimo, or the characteristic nose of the Jews. Many animals have lived on unchanged for many millions of years. For example, the bony structure of the Lingula of to-day is exactly like the fossils of the Silurian ages. Graves then takes up the question of modification, inborn variation, continuous variations of fluctuations, mutations, telegony, transmission of acquired characters, heredity in disease, and finally comes to the law of filial regression, of ancestral inheritance, and Mendel's law. His last paragraph treats eugenics. It is impossible to give a synopsis, condensed for these pages, and the reader interested in the question of heredity is referred to the article.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 3, 1910.

1. Ætiology of Ptoses and Their Relation to Neurasthenia, By Edward Reynolds.
2. Relation of Recruiting to Preventive Medicine, By W. H. Rennie.
3. Conservative Utilization of the Wassermann Reaction, By D. M. Kaplan.
4. The Colonoscope, By Heinrich Stern.
5. Exophthalmos in Brain Tumor, with Report of Eight Cases, By T. H. Weisenburg.
6. Brain Tumor of Psychomotor Area Causing Jacksonian and Generalized Convulsions, Visual Hallucinations, Somatic Delusions, Asterognosis, and Hemiplegic Paralysis; Operation; Recovery, Mental and Physical, By Frank Warren Langdon and Simon Pendleton Kramer.
7. Three Cases of Tumor in the Cerebellopontile Angle, By Julius Grinker.
8. The Topographical Diagnosis of Subtentorial Brain Tumors, By Herman H. Hoppe.
9. Ehrlich's Biochemical Theory, Its Conception and Application, By Louis Hart Marks.
10. A Case of Torsion of the Great Omentum, By W. W. Richardson.
11. Myiasis Dermatosa Due to the Oxwarble Flies, By Robert T. Miller.
12. Revised Directions for Making and Using the Wright Blood Stain, By James Homer Wright.

3. **Wassermann Reaction.**—Kaplan states that for diagnostic and therapeutic purposes the laboratory report of the Wassermann reaction should always be collated with clinical findings. Negative reports are of value in therapy. Treatment should be stopped for from four to six months after the patient becomes clinically and serologically normal and at the end of this period the test should be repeated. All patients cured of syphilis ought to have for preventive purposes a test performed twice a year. Any reappearance of the reaction even in traces is

to be dealt with similarly. Some patients who have had syphilis never lose the positive reaction in spite of any therapy. A negative report obtained on a serum from a suspicious case should defer treatment until the course of the disease decides the ætiology, provided there is no danger in delaying treatment. With a positive report one must not lose sight of the possibility of another disease being present besides syphilis. In his experience advanced scleroderma and old leprosy are more positive than old syphilis, quantitatively and qualitatively. In active tabes eighty-eight per cent. and in quiescent tabes forty-four per cent. of positive reactions were obtained.

5. **Exophthalmos in Brain Tumors.**—Weisenburg remarks that exophthalmos accompanies brain tumor more frequently than is generally supposed. It occurs only in those cases in which there is great intracranial pressure, especially when there is in addition direct interference with the normal flow of the cerebrospinal fluid. Exophthalmos is produced by direct pressure on the cavernous sinus. Its presence is of some clinical value inasmuch as unilateral exophthalmos is nearly always indicative of an intracranial lesion on the same side. In those cases in which the protrusion is bilateral there is nearly always a greater exophthalmos on the side of the greater intracranial pressure or lesion.

9. **Ehrlich's Biochemical Theory.**—Marks describes Ehrlich's studies. He says that Ehrlich believed that a specific chemical affinity existed between specific living cells and specific chemical substances, that for each specific parasite a specific curative drug could be found. An important question to be solved in starting this work was the selection of a suitable parasite and a suitable animal for experimentation. Because of the sleeping sickness epidemic in Africa, and because the trypanosome is easily transferable to mice, Ehrlich began working with trypanosomes. At first he used many dyestuffs, some entirely new, some old. He soon succeeded, in connection with Weinberg, in producing a new dyestuff, trypan red, which absolutely cured every infected mouse with one injection. This was the first time that a living organism was completely sterilized; that is, that every one of the parasites within the body was completely destroyed by a disinfectant. The complete sterilization of the animal's body with trypan red was but the first step forward in this new science. It was found that if a slightly smaller dose was injected than was necessary completely to destroy all the trypanosomes, then these would entirely disappear from the circulation for a period directly proportional to the dose given, but after that period they would again return. If the injection was repeated several times, a strain of trypanosomes would be obtained on which trypan red had not the slightest effect. In other words, the parasites became completely resistant to the largest dose of trypan red that it was possible to inject into a mouse without causing injury to it, and this resistance was transmitted to the trypanosomes for many generations. It is possible that if a strain of trypanosomes could be brought to the maximum immunity toward a given drug, this characteristic would become constant. The demonstration that these parasites could so readily become resistant to different chemical substances led to the logical conclusion that in order permanently to cure a parasitic disease it is necessary to destroy in the shortest time every single parasite with one injection of a drug, as it can readily be seen that if complete sterilization is not achieved, and frequently repeated doses are necessary, the substance would soon lose all effect, and the person or animal treated would then be worse off than before the treatment was begun. This, then, became Ehrlich's aim: To produce a substance which was so specific for given parasites that they would be completely destroyed by one injection. As has always been the case in the treatment of diseases, all possible drugs were tried on animals and people infected with trypanosomes. Bruce was the first to find that arsenic was a drug of appreciable value in the treatment of surra (trypanosomiasis of horses). Soon after Ehrlich started his work on trypanosomes, Thomas found that atoxyl, a compound of arsenic and anilin, would cure a large percentage of infected laboratory animals. Then Kopke used atoxyl in the treatment of human sleeping sickness in Africa. Ehrlich started to work with atoxyl. He found that some substances have no effect on the parasite in test tubes and possess no curative properties; or the substance has a highly destructive action on the parasites outside the body, but has absolutely no curative effect; and, finally, the substance has no effect on the parasite outside the body, but shows a highly or complete action when within the body. This action he called paradoxical or indirect, and it may be due to a change of the substance in the body that, while outside it was ineffective, it became effective inside; or it may be due to an inhibition of certain function of the parasite which have to do with its reproduction or the destruction of some of its constituent parts. The drug, therefore, either destroys all the parasites within the body by its direct and specific action, or the curative substance need kill only a certain number of the parasites, when the remaining ones will be destroyed by the rapidly formed antibodies. Ehrlich now turned his attention to that group of diseases caused by the spirilla, syphilis, relapsing fever, and chicken spirillosis, and, as Marks says, only a short time elapsed before dioxydiamidoarsenobenzol was brought forward. To test its efficacy, Ehrlich has given away over 20,000 doses free of cost to more than 500 selected physicians throughout the world.

MEDICAL RECORD

December 3, 1910.

1. Sulphhæmoglobinæmia, with a Report of the First Case in America, By T. Wood Clarke and Robert M. Curts.
2. Chemical Problems in Diabetes, By Adolf Magnus-Levy.
3. Occupation as a Therapeutic Agent in Insanity, By Mary Lawson Neff.
4. Ventilation of Cars, By W. A. Evans.
5. Diagnosis and Treatment of Osteal Tuberculosis without Abscess Formation, By Bayard Holmes.
6. The Treatment of the More Common Diseases of the Skin, By Edmund Lindley Cocks.

1. **Sulphhæmoglobinæmia.**—Clarke and Curts report a case of sulphhæmoglobinæmia, the eighth case to appear in the literature. As is well known, the

red color of the blood is produced by the pigment oxyhæmoglobin, and the bluish tinge of venous blood is the result of an admixture of reduced hæmoglobin. The action of various chemicals will produce various compounds of hæmoglobin; coal gas will cause a brilliant scarlet color from carboxyhæmoglobin, cyanides will produce a somewhat similar cyanhæmoglobin, and finally different drugs, as nitrites, potassium chlorate, and especially the coal tar antipyretics, acetanilide, phenacetin, sulphonal, and trional, if given in excessive doses, will cause the formation of the brown pigment, methæmoglobin. This condition of cyanosis in acetanilide poison was originally considered to be due to cardiac depression, but was soon found to be caused by a direct action of the drug upon the blood, transforming a portion of the red oxyhæmoglobin into the brown methæmoglobin, and thus markedly altering the patient's appearance. Claude Bernard and Hoppe-Seyler had, many years ago, experimentally produced a purple pigment, called sulphhæmoglobin by the action of sulphuretted hydrogen upon the blood. This condition was found, by Van der Bergh, to exist in a patient suffering from obstinate constipation. The patient of the authors, twenty-four years of age, had been a seven months' child. The general health was good up to 1900. She was a blue baby at birth and for the first six weeks of life. The habits were regular. She drank no coffee, but six or seven cups of tea each day. She did not use alcohol. For the past nine years her appetite had been poor, but the digestion good. The bowels were constipated. Menstruation began at sixteen and had always been irregular, painful, and scanty. The patient had had measles, whooping cough, mumps, and chickenpox in childhood, bronchial trouble and amygdalitis; malaria with considerable anæmia. She had glands removed from the neck, which the doctor said were tuberculous. In 1903, she had osteitis and periostitis of the left hand, and in 1904 a similar condition in the nose. In 1905 she had appendicular inflammation with appendectomy. In 1906 she had a long period of illness with profuse night sweats, severe abdominal pain, vomiting, great general weakness, and swelling of joints, with great purplish discoloration of the skin over the joints. There was also almost continual headache of a severe nature and occasionally periods of a low fever. In 1907, double oophorectomy was performed, following which the patient enjoyed fairly good health for a year. In 1908 she had very severe pains in the lower back. Since the first illness in 1900, the patient had been quite constipated. She had been under an anæsthetic nine times in the past seven years. The present illness began in 1909, when, after a nap, she noticed a bluish color of the skin. She did not grow weaker, but the bluish color became progressively deeper for a week, then remained stationary for about five weeks and then gradually cleared up almost entirely and remained so for three weeks. Then the skin again became gradually darker up to one week ago, since when it gradually improved. This last week represented the time when a definite diagnosis of sulphhæmoglobinæmia was made and systematic purgation instituted. The patient had suffered no other symptoms but weakness, bluish discolorations of the skin, and perhaps more marked constipation. The patient said that preceding each improvement she had had periods of severe vomiting lasting about twenty-four hours.

4. **Ventilation of Cars.**—Evans remarks that postal clerks, railroad men, and street car men, and other habitual riders are prone to the bad air intoxications: Headaches, sluggishness, flabbiness, sleepiness, anæmia, proneness to infections. Jammed, crowded cars were most dangerous. Ventilation should always be through air entering low down, passing over or through radiators, and flowing into the car below the seat line, and foul air leaving through the ceiling by ducts arranged around the lights. The air should enter the car at 50° F. or above. Street cars when heated should not have the temperature pass 55° F. In sleeping and passenger cars the temperature should not pass 65° F. Deck sash ventilation was never satisfactory. The air inlets should be so placed and so screened as to minimize the entrance of cinders and road dust. The inlet ducts should be as short and with as few angles as possible. In sleeping cars and day coaches there should be fans in the inlet ducts. These should run only when the car was standing. Greater uniformity was had in street car ventilation when fans were used to move the air.

BRITISH MEDICAL JOURNAL.

November 26, 1910.

1. A Clinical Lecture on the Use of Elastic Traction and Elastic Pressure in Surgery, By G. A. Wright.
2. An Address on High Blood Pressure in Arteriosclerosis, By R. D. Rudolf.
3. The Reaction of the Heart to Digitalis when the Auricle is Fibrilating, By Thomas Lewis.
4. Variations of the Fermentation Properties of the *Bacillus Typhosus*, By W. J. Penfold.
5. A Case of Diaphragmatic Hernia in an Adult, By Ernest Ringrose.

Seventy-eighth Annual Meeting of the British Medical Society.

Section in Otology.

6. Discussion on the Diagnosis and Treatment of Infective Labyrinthitis, Introduced by Robert Bárány.
7. Some Remarks on the Connection between Irritation of the Mucous Membranes throughout the Body and Middle Ear Catarrh, By Mark Hovell.
8. Experiments Bearing upon the Practicability of Treating Meningitis (Septic and Specific) by Means of Lavage of the Cerebrospinal Subarachnoid Spaces, By J. Stoddart Barr.
9. The Value of Ossiculectomy in Chronic Middle Ear Suppuration, By MacLeod Yearsley.
10. Deafness and Diseases of the Ear in Relation to the Public Services and Insurance: Their Bearing on Forensic Cases and the Choice of a Means of Earning a Livelihood, By Jobson Horne.
11. Discussion on Aural Tuberculosis in Children, Introduced by William Milligan.

Section in Laryngology.

12. Congenital Atresia of the Choanæ, By J. S. Fraser.
13. Headaches in Association with Obstruction in the Nasal Passages, By L. Hemington Pegler.
14. Tuberculin in Laryngeal Tuberculosis, By W. Camac Wilkinson.
15. Discussion on Vasomotor Rhinitis, Introduced by H. S. Birkett.
16. Cancer of the Throat, By Robert H. Scanes Spicer.

5. **Diaphragmatic Hernia in an Adult.**—Ringrose reports an autopsy made upon the body of a woman, twenty-six years old. She had been mar-

ried three years, no children. Had always been healthy, although highly neurotic. She had never suffered from digestive troubles, and, as she was always very thin, she had been in the habit of lacing rather tightly. She became pregnant and when in the sixth month complained of feeling sick. When examined, her face was very flushed, the respirations 44; pulse 144, regular, low tension; temperature 100.4° F. The heart's apex beat was in the fifth space, a little internal to the nipple line; the first and second sounds were normal. The percussion note over the front of the left side of the thorax was dull up to the second rib; above that it was hyperresonant. The breath sounds were weak except at the third space, where they were bronchial. On the left side at the back there was dullness on percussion, weak breath sounds, and diminished vocal fremitus up to the angle of the scapula; above that the percussion note was clear and the breath sounds bronchial; no adventitious sounds were audible anywhere over the left side of the thorax. There was considerable pain at the left costal margin. The patient was constantly eructating about half an ounce of clear yellowish fluid; the bowels acted well. The abdomen was occupied by the pregnant uterus of about seven months. The next day a child was born without any labor pains or warning; the placenta came away normally, and there was very little hæmorrhage. During the kneading of the uterus a large mass was felt in the left iliac and lumbar region; this was thought to be an ovarian cyst, but on examination per vaginam nothing could be made out, and the uterus was quite normal. The patient felt much more comfortable, so it was decided under the circumstances not to aspirate the thorax that night. Two days later the patient was markedly jaundiced, eructions of a black fluid were frequent, the thorax was aspirated, and six ounces of black fluid came away. The patient became cyanosed, pulse weak, and she finally died four days after examination. Upon a post mortem examination the uterus was found to be healthy; the spleen slightly enlarged; the stomach enormously distended and filled with black fluid, about three quarts in all; the stomach was rotated upon its axis, the fundus was situated in the thorax, as far up as the second rib, and was covered near the pylorus by the pancreas, which thus became extremely taut. The contents of the fundus could be pressed slowly into the pyloric portion, and the least pressure caused a quantity of the fluid to pour out of the mouth. The stomach walls of the abdominal portion were intensely congested, both internally and externally, and there had been considerable hæmorrhage into the lumen. The large omentum had passed partially through the hernia into the thorax. About one quarter of the small intestines was in the thorax, and together with the fundus of the stomach and omentum had compressed the left lung against the vertebral bodies. The transverse colon was empty, but still passed horizontally across the abdomen at a little below the level of the umbilicus. The hernia was situated on the left side of the diaphragm, and admitted the whole hand; its edges were formed of distinct muscular bands, the free edge being smooth and rounded; the upper edge formed a well defined falciform border reaching from the middle arcuate fibres to the attachment of the diaphragm to the twelfth rib. There was no evidence of any tear or laceration, in fact the condition strongly suggested a long duration, if not a congenital deficiency of the substance of the diaphragm between the middle arcuate fibres and the external arcuate band. There was no sac. It was of interest to note that after reducing the hernia, that is, pulling back the fundus and intestines into the abdomen, the condition at once recurred, being highly suggestive that this migration into the thorax had been of some considerable standing.

11. **Aural Tuberculosis.**—Milligan thinks that aural tuberculosis is of far more frequent occurrence than is usually supposed. An early and accurate diagnosis of the underlying factor in the production of suppurative otitis media is essential from a therapeutic, prognostic, and sociological point of view. Children suffering from tuberculous otitis media should be segregated and every endeavor made to raise their powers of resistance. Local authorities should be appraised of the great danger to life from an impure milk supply, and that means should be adopted to secure efficient supervision of dairy farms and creameries. Notification of tuberculosis, in whatever form it occurs, should be made compulsory.

LANCET

November 26, 1910.

1. Thrombotic Softening of the Spinal Cord as a Cause of so Called "Acute Myelitis," By H. Charlton Bastian.
2. The Diseases of Elephants' Tusks in Relation to Billiard Balls, By John Bland-Sutton.
3. Diffuse Lipoma, By Sir Jonathan Hutchinson.
4. The Progress of Infection in Phthisis. Containing a Plea for the Treatment of Early Cases by Absolute Rest, By L. Corbett.
5. The Preparation "606"; The Treatment of Syphilis by Ehrlich's Method; Indications and Contraindications. Observations made in Germany, By E. Emery.

1. **Thrombotic Softening of Spinal Cord.**—Bastian remarks that in the great majority of cases of so called acute myelitis, and also of acute poliomyelitis, the affection is caused not by an inflammation, but by thrombosis of some of the vessels of the spinal cord (where, in the latter disease, it is not due to a special acute degenerative process). Certainly, in the former affection, we have in the great majority of cases to do with thrombotic softening rather than with a true myelitis. This latter conclusion is rendered obvious by the similarity of the morbid changes in question to those occurring in the brain which are due to thrombosis, as well as to the absence of any reason why a primary inflammation should be rare in the brain and common in the spinal cord. These strictly logical reasons are strongly reinforced by the fact of the existence of special conditions favoring the occurrence of thrombosis in the vessels of the spinal cord, and in just such parts of the cord as are most frequently affected; by the fact that the disease is most commonly met with in just such persons and under just such conditions (as to heart's action, bloodvessels, and quality of blood) as are known to be favorable to the occurrence of thrombosis; by the fact that the mode of onset and the early symptomatology of the affection are wholly different from what they

would be, had an inflammation of the cord actually existed; and finally, by the fact of the absence of any reasonable cause of inflammation, certainly in the majority of those in whom the malady makes its appearance.

4. **The Progress of Infection in Phthisis.**—Corbett observes that with many infectious diseases it is a case of kill or cure, as, for example, with smallpox, in which either death follows quickly on infection, or immunity is established and the patient recovers. Tuberculosis is not of this kind. It is a comparatively slow disease, runs no definite course, and has but a feeble tendency to recovery. On the contrary, it too often continues to progress, more or less irregularly, and even if it becomes arrested one can never be sure that it will not recur. This disease then, as we see it at the bedside, does not appear to confer immunity, and this would seem to be the cause of the absence of any definite tendency to cure. This view of tuberculosis is not wholly justified, says our author, and he thinks that tuberculosis differs from other disease, in the points under question only in degree, that this disease does indeed confer some immunity, though of a feeble kind, and that in this, as in other and more acute infections, the hope of recovery must be based on the acquisition of this immunity. That recovery is frequent, at least from the early stages of infection, is well recognized at the present day, and is proved by the great frequency with which healed, or at least quiescent, tuberculous lesions are found after death from other causes, lesions which, in the majority of such cases, have never been detected during life. Many experimenters have attempted to produce immunity to tuberculosis in animals, and not altogeher without success. Experiments made for the Tuberculosis Commission have convinced our author that some degree of immunity to bovine tuberculosis can be induced in calves by injecting cultures of tubercle bacilli of the human type. Others have succeeded by different methods. But whatever method is used, even if the injections are repeated, the immunity attained is variable, and is never of high degree. It is not to be compared for a moment with that which may be induced in the horse against diphtheria. But while one clearly recognizes this difference in degree, one cannot ignore that some kind of immunity to tuberculosis can be experimentally induced in animals. In tuberculous man, too, there is evidence that some immunity to tuberculosis occurs, and he concludes that tuberculosis in man does tend to confer some immunity, and that it is on the acquisition of the new or improved powers of resistance which are the cause of this immunity, slight though they are, that the hope of recovery mainly depends. Resistance to tuberculosis, like resistance to other infections, is a very specific matter, and does not necessarily go hand in hand with what one regards as the general bodily health. We commonly assume that the two go together, and do everything to encourage the general wellbeing. We prescribe the most nourishing food, recommend fresh air, and are not adverse, in what we deem suitable cases, to moderate exercise. But we should ever bear in mind in phthisis the menacing danger of the infection of new areas and do all we can to avoid it, or to postpone it until the patient has become more immune. And if we can do this in the early stages by absolute rest in bed, we should not be deterred therefrom by the fear that the general bodily health will suffer.

5. **"606."**—Emery reviews the progress made in the use of dioxydiamidoarsenobenzol. He concludes: "Whatever may be the fortunate future of Ehrlich's discovery, one cannot withhold an unreserved admiration from this sympathetic *savant* whose whole scientific career is a model and an example of ingeniousness, of logic, and of perseverance."

BERLINER KLINISCHE WOCHENSCHRIFT.

November 7, 1910.

1. Problems and Purposes of Clinical Instruction, By GOLDSCHEIDER.
2. The Use of "606" in Nervous Diseases, By FRENKEL-HEIDEN.
3. The Inner Secretion of the Germinal Glands, By ARTHUR MUENZER.
4. The Muscle Condition in Cerebral and Spinal Muscular Atrophy, By FRITZ HEINRICH LEWY.
5. The Occurrence and Diagnostic Importance of a Pepsin Splitting Enzyme in the Contents of the Stomach, By L. KUTTNER and G. PULVERMACHER.
6. Morphological Blood Changes in Goitre and Basedow's Disease, By CARPI.
7. Contribution to the Study of the Genesis of Hyperthermia, By WIDERÖE.
8. Tuberculosis of the Adult Knee Joint with a New Theory and Method of Operation, By LEONARD W. ELY.
9. Pessary Treatment of Prolapses, By O. KAISER.
10. Acute Myeloid Leuchæmia. A Case of Green Discoloration of the Bone Medulla (*Concluded*), By S. N. ZYPKIN.
11. Infanticide, By MARX.

2. **The Use of "606" in Nervous Diseases.**—Frenkel-Heiden reviews the literature on visceral and tertiary syphilis, particularly of the nervous system treated with "606" and adds a few observations of his own. He mentions as of great importance that the remedy does not appear to have any deleterious effect on the optic nerve, such as is met with in the use of atoxyl, and that in syphilitic optic neuritis the remedy is directly indicated. Summing up he says that we have in this remedy one that is without danger, certainly useful in tertiary and true syphilis of the nervous system, and rarely harmful in metasyphilitic diseases. The theoretical objections to its use in paralysis and especially in tabes are untenable. The course and prognosis of each case mainly depend on inflammatory syphilitic processes rather than on the slow, frequently stationary degeneration of the nervous elements. Other antisyphilitic remedies have been used against these, but usually without effect, and he hopes that this remedy, which is often successful in cases of late syphilis in which mercury and iodide are of no avail, may prove beneficial in the degenerative metasyphilitic diseases.

4. **Muscular Conditions in Cerebral and Spinal Muscular Atrophy.**—Lewy says that true degeneration of the muscle with loss of its transverse striation is met with only in general injuries draining or poisoning the organism. Muscular atrophies in consequence of nervous disturbances whether peripheral or central, whether associated with degeneration reaction or not, are always simple quantitative atrophies with the transverse striation pre-

served. A preparation of the muscle therefore furnishes no basis for the clinical diagnosis of the nervous disease. This is drawn rather from the character of the paralysis and the presence or absence of the reaction of degeneration.

6. **Morphological Blood Changes in Goître and Basedow's Disease.**—Carpi says: 1. Leucopenia is not a constant symptom in Basedow's disease. 2. Lymphocytosis is one of the more frequent symptoms in Basedow's disease, yet cases are met with in which lymphocytosis is absent and it cannot be said to be a constant condition. 3. A typical lymphocytosis has been observed in myxœdema with lymphoid metaplasia of the bone marrow. 4. In simple goître without thyreotoxic symptoms lymphocytosis has been observed, and it may reach a high point. From these facts it follows that a characteristic and constant condition of the blood of positive diagnostic importance does not exist in Basedow's disease. Lymphocytosis, with or without leucopenia, is to be considered as a general symptom in thyreotoxic diseases.

7. **Contribution to the Study of Hyperthermia.**—Wideröe says that the intravenous infusion of salt and water produces in rabbits a rise of temperature dependent on the quantity of fluid injected. The rise of temperature is higher as the concentration of the salt increases. Ether narcosis prevents a rise of temperature. A new injection at the time a fall of the temperature is expected induces a distinct rise.

10. **Acute Myeloid Leuchæmia.**—Zypkin comes to the conclusion that there are two forms of acute leuchæmia, one lymphatic and one myeloid. The more acute the disease is the more difficult is the distinction, because the less will be the process of transformation of the differentiating cells and the less will mesolymphocytes and promyelocytes be found in the blood.

MEDIZINISCHE KLINIK.

November 13, 1910.

1. The Anatomical Basis of Physical Diagnosis, By R. Oestreich.
2. The Practical Importance of Maniac Depressive Insanity (*manisch depressives Irresein*) (*Concluded*), By Thomsen.
3. Contribution to the Biology of the Blood in the Period of Gestation, By M. Neu.
4. Sensible Sensory Hemiplegia with Tremor Resembling Paralysis Agitans, By Julius Donath.
5. Syphilis of the Pancreas, Combined with Syphilis of Other Organs, By J. Fey.
6. A Case of Præsenile Gangrene, By F. Erkes.
7. Convulsions during Whooping Cough, By Arnold Schiller.
8. Isolated Bilateral Spinal Paralysis of the Radial, By J. Rosenbusch.
9. Has the Appendix Vermiformis a Function? By Haertwig.
10. Symposium Concerning the Action of Ehrlich's "606" (*Continued*).

2. **Maniac Depressive Insanity.**—Thomsen states that the grouping of the diseases individually known as mania, melancholia, circular and periodic insanity, transitional and climacteric melancholia, acute and partially chronic paranoia, partially hysteric insanity, as well as neurasthenia, under the one designation maniac depressive insanity, is of practical benefit inasmuch as the prognosis in all of these is good, while the prognosis of the remaining diseases, true paranoia, dementia præcox, hebephrenia, and katatonia, is bad.

3. **Biology of the Blood in Gestation.**—Neu declares that an adreninæmia exists during gestation, no matter at what stage of the gestation the blood is examined. In the final stage it undergoes the greatest fluctuations.

5. **Syphilis of the Pancreas.**—Fey reports the clinical history of a case of syphilis of the pancreas, a condition well known to the pathologist, but scarcely so to the clinician. The patient recovered under treatment with mercury and potassium iodide.

6. **Præsenile Gangrene.**—Erkes reports a case of gangrene of a toe met with in a young man, nineteen years old. Arteriosclerosis, diabetes, carbolic acid intoxication, syphilis, and ergotism were all excluded as a possible cause, so by exclusion he calls the case one of præsenile gangrene met with in a very young patient.

9. **Has the Appendix a Function?**—Haertwig answers yes, that it is not a superfluous organ, but is necessary for the discharge of its contents from the cæcum.

10. **Symposium Concerning the Action of "606."**—In answer to questions as to the number of cases treated and the number of recurrences Bruhns reports seventy-four cases treated, two recurrences after 0.3, two after 0.45, three after 0.5. Delayed or insufficient retrogression of the symptoms appeared once after 0.3, once after 0.4, once after 0.8 (in two injections of 0.5 and 0.3 within three weeks), and once after 0.85 (in two injections of 0.5 and 0.35 within fourteen days). In these cases a further improvement was obtained by treatment with mercury.—Welander reports sixty-five cases with seven recurrences. Six of these had received 0.4, one 0.45.—Von Zeissl reports 149 cases with six recurrences.—Dreuw reports ten cases with four recurrences.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

November 15, 1910.

1. The Immunization of Animals against Tuberculosis, By Ruppel.
2. Arthropods as Disease Carriers, By Mueller
3. Further Experiences with Ehrlich-Hata's Injections, especially in Syphilis of the Nervous System, in Tabes, and in Paralysis, By Treupel.
4. Experiences with Ehrlich-Hata's "606" in Psychiatric Neurological Material, By Willige
5. The Action of Pantopon upon the Respiratory Centre, By Loewy.
6. The Influence of Pantopon upon the Respiration and Circulation, By Bergien.
7. Trypsin Treatment of Surgical Tuberculosis, By Sohler.
8. The Chemical Demonstration by Color of Some Oxydizing Substances of the Body, By Loele.
9. The Use of Lumbar Anæsthesia in the Gynæcological University Hospital in Leipsic, By Zweifel.
10. The X Ray Picture of Flatfoot, By Muskat.
11. The Calometric Valuation of Infant Food, By Mettenheimer.
12. The Therapy of Hæmophilia, By Krauss.
13. Multiple Osteomata of the Trachea, clinically Diagnosticated by Means of Direct Tracheoscopy, By Levinger.
14. The Occurrence of Typhoid Fever in Augsburg, By Boehm.
15. A Bandage Knife, By Sander.
16. The Question of Bolus Treatment, By Cohn.
17. Rudolf Chrobak, By von Winckel.

3 and 4. **"606" in Nervous Diseases.**—Treupel said that in six cases of syphilis of the central nervous system he obtained a quick and good result in four which lasted for months. In twenty-one cases of tabes he found the course after the injection to be the same and, as he thought, typical. After from two to three days the lancinating pains increased not only in the neighborhood of the injection, but also in the regions which were previously the seat of the pains. Then the pains subsided rapidly, the general condition improved, the weight increased, and there was an increased feeling of strength. The disturbance of sensation, the paræsthesia, disturbance in the function of the bladder and of speech, and the ataxia were improved. This improvement last for some weeks, but unfortunately was not permanent. Pupillary symptoms and tendon reflexes were not affected. Commencing optic atrophies did not advance. In the minority of cases Wassermann's reaction became negative after the injection. In ten cases of progressive paralysis there was a mitigation of the uncouth change of voice. For a few days after the injection the conditions of irritation gradually decreased as a rule, but not in all cases. Otherwise no objective improvement had been noticed after an observation lasting in one case nine months.—Willige concludes that the effect of "606" upon the metasyphilitic diseases of the nervous system cannot yet be stated with certainty. Some experiences indicate the possibility of obtaining improvements, or remissions in paralytics. The most suitable procedure, whether the single injection of a large dose, or of several weaker ones, or of combinations with other remedies must be determined by further experiment. He thinks multiple small doses to be preferred. The remedy does not always exert a distinct, regular influence upon Wassermann's reaction. When the reaction becomes negative after the introduction of the remedy it seems to become permanently so in only a small percentage of the cases. The influence upon the Wassermann reaction does not seem to be dependent on the size of the dose, nor to go hand in hand with the improvements or injuries observed after the injection. In metasyphilitic diseases of the central nervous system, including paralysis, the use of "606" is generally no more dangerous than in other diseases. Even affections of the optic nerve do not *a priori* exclude its use. Diabetes in a severe form is a contraindication to its use.

5 and 6. **The Effect of Pantopon upon the Respiration.**—Loewy and Bergien agree that pantopon produces much less effect on the respiration than morphine, and the latter adds that it produces no effect on the circulation.

7. **Trypsin Treatment of Surgical Tuberculosis.**—Sohler says that the injections are painful, that they are dangerous because of the instability of the solutions and the uncleanliness of the preparations, and that they induce toxic symptoms. The melting down of tissue affects first the diseased tissue permeated with tuberculosis and ready to break down, but does not stop at the healthy tissue. The detachment of the joint cartilage thus caused makes the prognosis worse instead of better. The collateral effects of trypsin, local hyperæmia, and stimulation of the tissue can be obtained just as well at least by chemical means with less pain and less danger.

9. **Lumbar Anæsthesia.**—Zweifel reports 1,500 cases. Stovaine was used in about 100, tropacocaine in about 400, and novocaine in about 1,000 cases. Novocaine proved the best. The anæsthesias were complete in seventy-five per cent., in fifteen per cent. small quantities of ether had to be given at the beginning of the operation. Failures amounted to about ten per cent., of which only a portion were complete. Stovaine was discarded because of its high toxicity. With tropacocaine the anæsthesia was satisfactory in only about fifty per cent. No case of death directly ascribable to the lumbar anæsthesia was met with.

12. **Therapy of Hæmophilia.**—Krauss recommends in addition to the usual remedies the subcutaneous injection of 1 or 2 c.c. of serum, frequently in the form of antidiphtheritic serum. He has obtained in this way good results in the management of two brothers, both subjects of hæmophilia.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

December, 1910.

1. Pleurisy as a Complication and a Sequel of Lobar Pneumonia: Its Diagnosis and Treatment, By James M. Anders.
2. The Use of the Soy Bean as a Food in Diabetes, By Julius Friedenwald and John Ruhräh.
3. The Rôle Played in Auscultatory Signs of the Respiratory System by the Sound Conducting Property of the Bony Framework of the Thorax, By Joseph H. Barach.
4. A Clinical Method of Estimating the Coagulation Time of the Blood, By Robert Dawson Rudolf.
5. The Clinical Significance of Transitory Delirium Cordis, By George Henry Fox.
6. Erythremia or Polycythæmia with Enlarged Spleen and Chronic Cyanosis, By Edward C. Seufert.
7. Tuberculosis and Menstruation, By David Israel Macht.
8. The Incidence and Significance of Smooth (or Indurative) Atrophy of the Base of the Tongue, By Douglas Symmers.
9. The Syndrome of Sphenopalatine Ganglion Neurosis, By Greenfield Sluder.
10. The Clinical Value of the Cammidge Reaction, By Lyell C. Kinney.
11. The Determination of Chlorine and the Purin Bodies in Urine, By Roscoe W. King.

1. **Pleurisy as a Complication of Pneumonia.** Anders remarks that the treatment of pleuritis developing before the crisis in pneumonia may require different management from that appropriate in cases arising after the occurrence of that pivotal event. When a serous exudate supervenes in the course of the pneumonic process, an expectant method of treatment is to be advocated, first, because puncture followed by aspiration is badly borne in pneumonia cases, and secondly, for the reason that if the crisis is survived by the patient, the exudate quite generally is absorbed with surprising rapidity. If, however, the serous effusion does not promptly disappear following the crisis, recovery is to be hastened by puncture, which has been found to be successful. Again, the removal of a part of a massive effusion, which has displaced the heart and other adjacent viscera, is rarely necessary during the fastigium, and favors spontaneous

resorption. Such cases, however, may rarely demand more radical operative measures for their cure later on, after the crisis, and these should not be too long delayed. On the other hand, a complicating serous pleurisy may prevent the occurrence of the crisis in lobar pneumonia, fever of an irregular type continuing indefinitely, or the temperature dropping by lysis. In such cases, if the effusion is copious and remains undiminished in amount, puncture should be undertaken early, and repeated if necessary. Remedial measures intended to control pneumococcic inflammations of serous membranes are of small value, and it is of the utmost importance to avoid the use of drugs that act as depressants in all pneumonia cases. The remedies that exercise a favorable effect in serous pleuritis in general are opium, quinine, and the salicylates. In pneumococcic pleurisy, the salicylates are to be eschewed owing to their depressing action. Opium may be resorted to during the early stage of the primary disease, pneumonia, to relieve the pains of a complicating pleuritis, but it should not be employed during the advanced periods, when the bronchi contain secretory products, since it dries these, thus favoring their accumulation rather than their removal. He has had considerable experience of the use of quinine in serofibrinous pleuritis complicating pneumonia, and feels strongly that it possesses a limited value, both as a supportive agent and in mitigating the serous inflammation. It is his custom to administer the drug in four grain doses, in capsule, followed by a few drops of dilute hydrochloric acid to insure its prompt solution, three or four times daily. Local measures may prove serviceable in selected cases. Counterirritation by means of sinapisms is to be advised in the milder forms of associated pleurites that may accompany pneumonia, and the same is true of cold applied in the form of an ice bag.

2. **Soy Bean as a Food in Diabetes.**—Friedenwald and Ruhräh speak of the soy bean (*Glycine hispida*), sometimes incorrectly called the soja bean, an annual leguminous plant which originally grew in a wild state from Cochin China to the south of Japan and to Java, and has been known in the United States for many years. It has been one of the staple foods of Japan, the large amount of nitrogen probably accounting for the small amount of meat and other animal food taken by the Japanese. It contains no starch, or at least, a very minute quantity, and this suggests its use in certain diseases, or in infant feeding. The authors have used it in eight cases of diabetes, and come to the conclusion that its use is of the greatest value to the diabetic; for when the rather limited diet is observed to which the diabetic patient is restricted, any addition to his dietary must be greatly welcomed. This is especially true of a food free of starch, and containing much protein as is found in the soy bean, which may be utilized in the body in place of that of other vegetables and of meats. The beans may be taken as a vegetable by soaking them for about twelve to sixteen hours, until the skins come off, stirring until the skins rise to the surface and can be removed, and then boiled in salt water or with bacon until soft, and seasoned with pepper, salt, and butter, and served hot. When the bean is not available the gruel flour from the soy bean is even more serviceable. The authors placed their patients first, upon an unlimited diet; second, upon the restricted (usual diabetic) diet; and, third, upon restricted diet together with the soy bean. The soy bean replaced largely the gluten of wheat bread, while the patient still remained upon the usual diabetic diet. In nearly every instance there was a marked diminution in the glycosuria. The authors conclude that the soy bean is a valuable addition to the dietary of the diabetic on account of its palatability, and the numerous ways in which it can be prepared. The soy bean in some way causes a reduction in the percentage and total quantity of sugar passed in diabetic subjects on the usual dietary restrictions.

4. **Coagulation Time of Blood.**—Rudolf advocates and describes a method of measuring the coagulation time of the blood which is convenient clinically and which seems to give reliable results. The temperature at which the experiment is carried out makes a marked difference in the results. This difference is about one minute for each degree Centigrade. At 20° C. (68° F.) the average coagulation time is about eight and one half minutes. Age (beyond early childhood) and sex seem to have no influence upon the coagulation time. A diurnal variation does not seem to occur; possibly there is a slight increase in coagulability as the day advances, but this is probably due to experimental error. There appears to be a slight tendency to decrease in the coagulability some two hours after a meal, but it is too slight to put much weight upon. Calcium lactate does not appear to have any marked influence upon the coagulation time of the blood of normal individuals. Citric acid appears to have a slight retarding influence upon the coagulation. Considerable variation occurs in the coagulation time of a healthy individual from time to time, the nature of which is not evident.

7. **Tuberculosis and Menstruation**—Macht gives the following résumé: The effect of the tuberculous process on menstrual function is manifested chiefly in changes in the menstrual type. Tuberculous patients may menstruate regularly to the end, especially after the age of thirty-five years. The patients may have amenorrhœa, passing into complete suppression of the menses. Quite an appreciable number, 4.6 per cent., may have menorrhagia preceding the amenorrhœa. The age of the patient is the most important factor in these conditions. Some cases of dysmenorrhœa are of a purely tuberculous origin, and are relieved by tuberculin treatment. The effect of treatment in general is to restore a normal type of menstruation. The changes in the menstrual type are of considerable diagnostic and prognostic value. The influence of menstruation on the tuberculous process is manifested by aggravation of all symptoms, and accentuation of physical signs. The effects of "ovulation" may continue after the menstrual flow has been suppressed. Periodic variations in temperature are very common, occurring in probably fifty per cent. or more of all cases, and are of diagnostic and prognostic value. These rises in temperature may be premenstrual, menstrual, postmenstrual, intermenstrual. Periodic hæmoptyses and other hæmor-

rhages in tuberculous patients are more common than is generally assumed. These hæmoptyses may occur simultaneously with the menstrual flow, or may take the place of the menstrual flow. True vicarious menstruation does occur, but is exceedingly rare, so that in most cases of vicarious hæmoptysis a tuberculous lesion is to be suspected. Tuberculin should not be administered at the time of menstruation. The evil effect of the menstrual processes on the patient's constitution can be minimized by proper treatment.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Fifth Annual Meeting, held in Wichita, Kansas, October 11 and 12, 1910.

The President, Dr. G. H. MOODY, of San Antonio, Texas, in the Chair.

Colica Mucosa.—Dr. E. H. THRAILKILL, of Kansas City, Mo., had chosen the designation colica mucosa from the long list of names that had been proposed for noninfectious diseases of the mucous membrane of the colon. It was most appropriate, for it designated the passage of mucus and the attacks of colic. Formerly this was considered a constitutional disease, owing to the lack of scientific knowledge as to its ætiology and pathology, but in recent years various views and opinions had arisen and had been published. He had adopted the following classification: 1. Those cases due to a motor and sensory neurosis he designated simple colica mucosa. 2. Those due to extracolonic conditions, causing interference with the fæcal discharges, he designated colica mucosa reflexa. 3. Those due to an extension of the inflammatory process from the rectum or appendix or to the retention of hardened fæcal masses, to foreign bodies, or to the prolonged use of cathartics, causing an inflammatory condition, he designated mucous colitis. Each class required a different treatment surgically and medically. After reporting a case of each class, the author said that in chronic cases, or those due to a mechanical interference, or an inflammatory process, the mucus was thick and tenacious and its passage attended with considerable pain, due to the strong peristalsis of the bowel in its effort to dislodge and expel it. The majority of these patients gave a history of disturbed digestion or constipation preceding the onset of this affection. He had had patients give a history of diarrhœa preceding or accompanying this trouble. As a rule, the diarrhœa was due to a diet composed of concentrated food and to the lodgment of fæcal crumbs throughout the bowels.

Dr. ARTHUR E. HERTZLER, of Kansas City, Mo., said the classification given was very sensible. The great difficulty that had arisen in the conception of this disease had been due to confounding the various classes of cases. In some cases the condition was neurotic; in others it was not. We had not used enough care in separating the different cases. It was sometimes difficult to make a satisfactory diagnosis, because the neurotic condition might be secondary to some organic disease. A patient might present a history of some neurotic condition, and the natural inference was that the trouble was the result of nervous disease, and yet the disturbance might be secondary to some abdominal lesion which was obscured by the existence of the organic trouble. Unfortunately, we were not in possession of sufficiently clear knowledge of the abdominal conditions which developed in these nervous states to be of much avail. Most of the cases of colica mucosa he had seen had been in neurotic subjects, and they had responded to treatment by the neurologist. There were a number of cases attended by stomach disturbance and in others there were diverticular formations, and yet there was no definite symptomatology.

Dr. G. W. ROBINSON, of Kansas City, Mo., said his experience with colica mucosa had been confined chiefly to cases among the insane. This condition was more frequent among them than with any other class of patients. The conditions among the insane were favorable for its development. Constipation was very common among insane patients, and it was found that there was a disturbance of the function of the cells of the central nervous system. He believed this condition was chiefly a perversion of the secretory nerves as well as the motor nerves of the intestines.

Postoperative Care and Treatment of Suprapubic Prostatectomy.—Dr. D. W. BASHAM, of Wichita, Kansas, said that suprapubic prostatectomy offered a marked exception to the expectant plan of postoperative treatment. The fact was that the after treatment was fully as important as the operation itself. Many patients would either die or fail to recover the full function of the bladder without suitable treatment during convalescence from the operation. Suprapubic prostatectomy should not be performed outside of a hospital, unless an experienced male nurse could be left with the patient to attend to the details of the after treatment. Most of these patients were in an enfeebled condition, brought about by years of catheter life, with infection of the bladder accompanied with pain and vesical tenesmus. Frequent attacks of urinary stasis might have resulted in an ascending pyelitis. These conditions might all be aggravated by prolonged and crude efforts to pass the catheter. It was possible for pyelitis to be provoked after the operation, provided the drainage was not absolutely unobstructed. Drainage was indispensable in most cases of suprapubic prostatectomy. There were a few cases in which the bladder might be closed and urethral drainage depended upon, but they were the exceptions. The use of a rubber tube having a diameter of not less than half an inch, fenestrated toward the end and having the edges pared to a feathery thinness, constituted the best method of drainage. If the tube was even larger in calibre, it was still better. Hæmorrhage might be controlled and treated through a large tube. The method of placing the drainage tube was important. Neither the drainage tube nor the bladder should be stitched to the abdominal parietes. It was better for these patients to get out of bed early. This facilitated both drainage and the early passage of the urine through the urethra.

Dr. JABEZ N. JACKSON, of Kansas City, Mo., said he was a strong advocate of the perineal route in removing the hypertrophied prostate rather than the suprapubic. In his early practice he resorted to the suprapubic method, but abandoned it subsequently for the perineal, as one of the great difficulties attending the former was the establishment of proper drainage through the suprapubic wound. If he were going to do suprapubic prostatectomy as a routine measure, he should be inclined to employ the method of Senn, namely, do the operation in two stages, the first stage consisting of making an incision down to and exposing the bladder wall, followed by packing until the cellular space about the bladder was closed by granulations, then making an opening through the bladder. In this way we did away sometimes with infection which took place in the freshly exposed cellular tissues and ultimately interfered with the healing of the wound.

Dr. Bransford Lewis, of St. Louis, had always advocated catholicity in connection with this subject and freedom from being restricted to any one operation; still his preference was for the perineal operation in selected cases. He had never been converted to the use of a large tube, such as was used by Freyer and others, because he had not been able to see the advantage of it, particularly when drainage could be accomplished just as effectually and satisfactorily by a smaller tube which would entail a shorter time for convalescence and granulation than a very large tube. The formation of clots could be prevented by the siphonage apparatus of Bremmerman, of Chicago.

Dr. E. G. Mark, of Kansas City, Mo., said that, while he favored the perineal route in most cases, yet there were instances in which the suprapubic was unquestionably the one of choice. The main thing after suprapubic prostatectomy was drainage, and patients with hypertrophied prostate requiring prostatectomy practically always had cystitis. To obviate the occurrence of hæmorrhage and to secure efficient drainage, to do away as far as possible with the formation of clots following cystotomy, nothing in his hands had proved so valuable as continuous irrigation for twenty-four or forty-eight hours.

Dr. J. D. Griffith, of Kansas City, Mo., stated that he had done more operations by the suprapubic route than by the perineal. While he admitted the advantages of the perineal route, he thought with Freyer that there were many cases in which a suprapubic cystotomy was demanded, and that efficient drainage was the thing par excellence. He believed in irrigating the bladder and in siphonage. He believed in protecting the space of Retzius with gauze.

Dr. Howard Hill, of Kansas City, Mo., said, with regard to the use of a tube through the incision after suprapubic prostatectomy, that he favored a large one, as he believed it was more advantageous than a smaller one. After the operation continuous irrigation with hot water, with the patient propped up well and on the side, would control the hæmorrhage. Hæmorrhage was one of the serious objections to suprapubic prostatectomy, because it occurred from the time the operation was begun, and hæmorrhage marked the first stage in the after treatment of the patient. In regard to suturing around the tube to prevent leakage, one could secure the skin and bladder together.

Dr. C. G. Norberg, of Kansas City, Mo., said that his experience had been confined very largely to operating in cases of hypertrophied prostate by the perineal route, and he preferred it to the suprapubic operation.

Dr. Basham said it was evident from the discussion that the last word on prostatectomy had not been said. Each speaker had voiced his own convictions in the matter, and that spirit was to be admired because it was in that way that we advanced our knowledge. This was an operation that must be done, and it behooved us to master all the details connected with it in order that we might increase the safety of the operation.

A New Method of Cure for Pelvic Infections in Women.—Dr. J. F. Kuhn, of Oklahoma City, Okla., said that peritoneal infections of the pelvis were easily controlled, because with the Fowler position the infectious material was confined to the pelvic cavity, where toxines were more slowly absorbed than in the upper peritoneal regions, and in consequence the system produced antibodies rapidly enough to counteract their effects. He wished to lay special stress upon the treatment through the rectum with normal saline solution. By the method he suggested, the rectum was distended at six hourly periods with from one to four pints of the solution at 105° F., increasing the quantity gradually as tolerance for a larger amount was established. Intermittent periods of hyperæmia were thus produced which hastened the destruction of the infecting organisms, induced more rapid absorption of the resultant plastic lymph, and prevented the formation of the dense adhesions so commonly seen in the neglected cases. It had all the other advantages of normal saline, stimulating and aiding the emunctories in ridding the system of the products of infection, fortifying the system during its struggle to produce antibodies, and finally, by the action of heat locally, relieving the patient of the distressing pain which was her chief complaint.

Dr. Hertzler said the treatment of the first stage of gynæcological gonorrhœa had resolved itself in his hands into purely deliberate treatment. These women were put to bed, their bowels were moved, and practically nothing more was done. The result of this line of treatment ran something like this; about two thirds of them recovered their health; about one quarter of these two thirds would conceive. The remaining third would come to operation. At the end of the first few days there would be a leucocyte count of from 15,000 to 25,000, which would drop down to normal in two or three weeks, and this was preceded in its course by a drop of the temperature to normal. The temperature fell to normal usually ten days before the leucocyte count did. He had obtained excellent results from the use of autogenous serum in chronic cases of gonorrhœa, but his experience with the stock serum had not been satisfactory.

Dr. J. A. Walker, of Shawnee, Okla., had not tried the method that had been outlined by the essayist, but a reasonable time to wait for inflammation of the Falloppian tubes to subside and to incarcerate itself by the adhesions of the fimbriæ, and ordinarily by the occlusion of the uterine end of the tube, would isolate the pus cavity from the general peritoneal cavity, but it did not isolate it sufficiently to prevent the formation of strong adhesions to the surrounding tissues. As long as those adhesions were present the patients were going to have trouble. If the inflammation was of a streptococcic nature, the adhesions were more apt to be dense and lasting than if they were from the Neisser coccus, and when the adhesions were so strong and dense, he did not believe it was wise to be too conservative and wait too long before breaking up the adhesions and removing the foreign body, which an old collapsed, occluded tube was bound to be. His practice had been to wait a reasonable time for the inflammation to subside and for the pus after having become sterile to be reabsorbed. If he thought such a thing had not occurred, he removed the tube, leaving all the ovarian tissue possible.

Dr. J. D. GRIFFITH, of Kansas City, Mo., said we knew how dangerous infection was from the Neisser coccus and how frequently we met with it. He had used the serum in these cases, and he had used the knife. He had resected the tubes and tried to save organs that he thought would preserve their function, but the treatment the essayist had outlined in the acute stage, of filling up the rectum with normal salt solution, with the patient in the Fowler position, he had never tried, but when the first case presented itself he was going to do it.

Dr. KUHN said that if in a community not larger than Oklahoma City he could treat a series of twenty-eight cases with the treatment he had outlined without a failure, Dr. Griffith and others could certainly achieve the same results in the larger communities in which they practised. He hoped they would try the method.

Treatment of Patients Desperately Ill in Consequence of Accident.—Dr. CHARLES E. BOWERS, of Wichita, Kansas, said that these patients demanded immediate attention. Many of them seemed to be beyond hope; others recovered notwithstanding shock, hæmorrhage, or infection might be present. In these cases it became necessary to do what we could to save lives that were thus jeopardized. What resources had we at our command to assist reaction? What kind of intervention did we resort to and by what signs did we know that our patients were exhausted on account of shock, hæmorrhage, or infection? Prompt and efficient intervention was demanded. The term shock had been applied to the clinical phenomena of pallor, lowered temperature, lowered blood pressure, diminished respiration, weak pulse, feeble heart action, and mental torpor. In treating shock the first therapeutic agent indicated was something that would raise the temperature, and the best was dry and moist heat. Perhaps a hot bath would do the most and then the methods of dry heat. The second thing to do was to lower the head in order that we might benefit the circulation of the brain. It was the brain circulation that had much to do with shock, and with a better brain circulation very soon the patient would recover from shock. The third thing to do was to reestablish the normal specific gravity of the blood, and that could be done by saline solutions subcutaneously or by the rectum or by the transfusion of blood.

Dr. HOWARD HILL thought that the various manifestations of lowered blood pressure, such as anæmia, could best be met by the use of normal saline solution, the application of heat externally, and the internal administration of salines. The author of the paper had mentioned severe shock from burns, and the use of morphine to control the afferent impulses. It was beneficial in many cases of shock. It cut off the afferent impulses, and the application of heat externally, the inversion of the patient, and the introduction of fluids into the body, such as normal saline solution, constituted all we could do.

Dr. JOHN PUNTON, of Kansas City, Mo., said that, whatever the shock might come from, whatever the injury might be due to, the prognosis was always as important as the treatment itself. Women and men got well, and the question was brought up as to appropriate treatment. He had discovered that shock spent its force on the vital organs, hence they had usually a disturbance of the pulse, the temperature, and respiration. He had found that shock was attended with more or less loss of consciousness, and the question of prognosis in the presence of loss of consciousness was oftentimes a very perplexing one to the surgeon as well as to the internist. There was no surgical rule that enabled the surgeon to tell with positiveness whether the prognosis was favorable or not, but he had found that a very good rule to adopt in such cases was not to lengthen the time the loss of consciousness was present. The generally accepted view was that the longer the duration of the loss of consciousness the less chance there was for recovery. As a general rule, that was true, but it was subject to so many exceptions that it was worth while for us to remember that in the presence of shock, and in the presence of loss of consciousness coming from shock, the respiratory centre played a more important rôle in the prognosis than the temperature or the increased pulse, so that where there was a question as to the prognosis, it was wise to remember that increased respiratory activity was a very much more unfavorable sign than either the increased temperature or the accelerated pulse, and if surgeons would adopt that rule, it struck him that they would give a favorable prognosis when they might otherwise be led, in the presence of loss of consciousness, to give an unfavorable one.

Dr. GEORGE A. BOYLE, of Enid, Okla., thought the personal equation entered into every individual case of shock. There were individual characteristics. There were phlegmatic persons who would stand more injury with greater shock and recover than others who were highly organized, nervous individuals. After twenty-five years of experience he was unable to determine just what the result in a given case of shock was going to be.

Dr. D. A. MYERS, of Lawton, Okla., said that in cases of infection, where we found the pulse and temperature divergent, we could nearly always make up our minds that if we gave a bad prognosis we should be on the safe side. But as soon as the pulse and temperature began to harmonize, we could begin to encourage the patient. The outlook was more favorable.

(To be concluded.)

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Physicians' Visiting List (Lindsay and Blakiston's) for 1911. Sixtieth year of its publication. Dose Table has been revised in accordance with the new U. S. Pharmacopœia. Philadelphia: P. Blakiston's Son & Co., 1911. (Price, $1.)

This well known diary is published in several styles containing special memoranda pages and arranged for twenty-five, fifty, seventy-five, or one hundred patients for each week; the first two in one volume and the last three in two. Besides the calendar and visiting list, it contains notes on the immediate treatment of poisoning and a dose table, both in English and the metric systems, corresponding to the *United States Pharmacopœia.* The book is so well known that it is hardly necessary for us to point out its excellence.

The Elements of the Science of Nutrition. By GRAHAM LUSK, Ph. D., Sc. D., F. R. S. Edin., Professor of Psysiology at the Cornell University Medical College, New York. Second Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company, 1909. Pp. 402. (Price, $3.)

The second edition of this important work includes the facts that have been discovered during the past three years, and thus accomplishes the purpose of presenting the scientific substratum upon which rests our knowledge of nutrition in health and in disease. There is a more and more general recognition of the importance of work of this kind, and it is unlikely that many more years will elapse before every hospital that aspires to be considered as properly equipped will have attached to its staff a physiological chemist with a suitable laboratory for investigating the phases of metabolism in disease states. This work is as important as that of the pathologist, who to-day is a necessity for every hospital, and the author's pioneer work in this field in this country is bound to make professional men of the future his debtor. And while, as he states, the primary cause of metabolism remains a hidden secret of the living bioplasm, we believe that his coworkers and successors in this field of research will arrive at the solution of this secret.

Gynæcological Diagnosis. By WALTER L. BURRAGE, A. M., M. D. (Harv.), Fellow of the American Gynæcological Society, Clinical Instructor in Gynæcology, Harvard University, etc. With 207 Text Illustrations. New York and London: D. Appleton & Co., 1910.

With one exception, this is the only American book on gynæcological diagnosis. Its appearance is no doubt in response to a demand for such works. While it is to be welcomed as an effort to elucidate diagnosis for the general practitioner, we have repeatedly expressed our view that particularly the special departments of medicine cannot be taught didactically no matter how good the teacher. Dr. Burrage's book is especially good in most of its sections and we trust it will be as useful as it is generally correct.

Particularly to be praised are the chapters on history taking, on the urethra, bladder, and ureters, on the rectum, and on the gynæcological affections of infancy and childhood and the menopause and old age. The illustrations are well chosen and represent better than usual, we think, the things they are intended to portray.

Many of the chapters on diseases of the female genitals are rather sketchy, even if they are thorough. Such, for example, are those on malignant disease of the uterus and on extrauterine pregnancy. As this work was written for the general practitioner, we wish that the author had given much more space to these two topics, for they are, to our mind, the two themes on which the general practitioner needs most and most constantly reiterated instruction.

In the chapter on pelvic inflammations we note that the author says that pelvic cellulitis is a relatively rare disease. In our experience this is very far from the fact; and we do not believe that this statement will bear comparison with the reports from large clinics. Certainly in New York it is a very common affection.

We have selected, here and there, parts of the book to criticise, but we have no desire to be hypercritical. The bulk of the book is excellent. It is well written, it is expressive of the author's own experience (a valuable thing, we think, in any book), and it teaches the lessons of the diagnosis of gynæcology as well as it is possible for mere books to do it. We have already mentioned the excellent character of the illustrations, and the making of the book is beyond reproach.

Scientific Living. For Prolonging the Term of Human Life. The New Domestic Science Cooking to Simplify Living and Retain the Life Elements in Food. By LAURA NETTLETON BROWN. New York and Passaic, N. J.: The Health Culture Co.; London: L. N. Fowler & Co., 1910. Pp. xiv-284. (Price, $1.)

This book, for popular reading, seeks to emphasize that it is "scientific to select food that sustains the system instead of that which loads the system with death producing poisons"; further, that it is scientific to control the emotions, appetites, and passions, to entertain thoughts of kindness, to curb the desire for wealth, to relax occasionally, to accumulate vitality, and to do some other advisable things. The praiseworthy purpose of the book should preclude criticism of the misuse of scientific, and it may prove a useful handbook to many housewives, who can learn from its chapters on cooking.

A History of the London Hospital. By E. W. MORRIS, Illustrated. New York, London, Bombay, and Calcutta: Longmans, Green, & Co., 1910. Pp. ix-296. (Price, $1.75.)

The author has prepared a very interesting history of this well known institution, which has been the outcome of a meeting of seven men in the bar parlor of the Feathers Tavern, Cheapside, in the evening of September 23, 1740, when one hundred guineas were subscribed to begin the hospital. In London at that time there were but St. Bartholomew's, St. Thomas's, the Westminster, Guy's, and St. George's hospitals: but these public spirited founders, who had collected a sum of money that would not do more than pay the running expenses of the present institution from sunrise to sunset of one day, rented the house, employed care takers, bought furniture, and had their treasurer report after all preparations were made that there was a shilling left in the bank. This incident seems to us unfortunate, as it may be cited as a precedent for the all too general custom in this country to do the same in the foundation of a hospital that has no funds for its administration after the building is leased and furnished.

The new venture prospered and in five months a move was made to another house, and later adjoining houses were leased. In 1751 the present site was leased from the city of London for a term of years ending in 2166. The building was begun in 1752, and built gradually as funds were collected, being completed in 1759, although patients were received in it in 1757. It then had 161 beds, and that accommodation has been increased in the passing years until now it can care for nearly 1,000 bed patients.

The author traces the gradual growth of the hospital, and we learn that the problems of employees, staff, and administration in general were very much the same with it as in this twentieth century they are with others. This account of achievement will be of interest to all engaged in hospital administration.

The Expectation of Life of the Consumptive After Sanatorium Treatment. By NOEL DEAN BARDSWELL, M. D., M. R. C. P., F. R. S. (Edin.). Medical Superintendent, King Edward VII Sanatorium. Edinburgh, Glasgow, and London: Henry Frowde and Hodder & Stoughton, 1910.

In this carefully prepared statistical analysis of the results of treatment of 241 discharged sanatorium patients, based upon their condition from four to nine years after discharge, the author has made a substantial contribution to a field which has hitherto been very insufficiently studied. There is much in his unbiased conclusions to temper the exaggerated enthusiasm of those who would have us believe that in sanatoria alone we have the chief, or even a relatively important, means of combating tuberculosis in its broadest aspects. It is high time for it to be more generally recognized that a temporary sojourn of a few months in a well conducted institution is not usually sufficient for the cure of even early and favorable cases of tuberculosis. Dr. Bardswell justly says: "Pulmonary tuberculosis, however, in spite of the advances of recent years, still remains one of the most difficult diseases to cure." His frank statistics show among patients, mainly from the upper classes, discharged as "apparently cured" and "arrested," a mortality three and a half times that of the normal for their ages. This book, with its case histories in brief, will be a wholesome corrective of the impression now too generally prevalent among both laymen and physicians that tuberculosis is a matter only of milk and eggs and fresh air.

MEDICOLITERARY NOTES.

The practitioner of average clientèle will be astonished to learn on page 593 of the December *Strand* that in six weeks he ascends in his rounds, stoops and stairs, to the total height of 15,781 feet, the altitude of Mont Blanc. There is an interesting physician hero in The Mystery of J. H. Farrer, by E. Temple Thurston. In A Tiny Flutter, by Horace Annesley Vachell, the heroine is cured of pulmonary consumption by a sudden success in speculation in stocks; we do not advise generalization from this unique case.

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People who liked Robert Elsmere will be glad to meet his daughter in The Case of Richard Meynell, the new serial by Mrs. Humphry Ward beginning in the December *McClure's*. Perhaps it is meticulous of us to note that a dying man in this story breathes "quickly and shallowly" under the influence of morphine; he might have breathed slowly without detriment to the narrative. There is a sympathetic sketch of Paul Ehrlich, by Marguerite Marks, in which his pathological theories are cleverly expounded to the nonmedical reader. Goldwin Smith's reminiscences continue and involve many famous personages. The fiction is superior and the special articles are clever, as usual.

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Through the Mists, Sir Arthur Conan Doyle's new series of stories, is continued in the December *Scribner's* by The First Cargo, told in letters by a Roman gentleman sojourning in Britain. We regret that this author did not sign his letters, for the latter compare very favorably, especially in characteristic wit, with those of J. Cæsar and M. T. Cicero. We suggest with deference that these epistles would make admirable exercises for young students to translate into the Latin language, whence they are supposed to have come. There is an interesting discussion of old age in The Point of View, the editorial department. The illustrations in this number are beautiful and include four by no means superfluous pictures of children in Dickens's novels.

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Physicians who desire to invest in fur overcoats or robes for their 90 h.-p. touring cars will read The Last Chapter in the Romance of Fur, by James Oliver Curwood, in the December *Pearson's*, with annoyance. Apparently it will soon be economically necessary to preserve the fur of the Welsh rabbit and other pelts hitherto discarded with our national extravagance. The Pasteurized Milk Fraud, by Arno Dosch, is a disgusting revelation of the lengths to which commercial greed can go. The new make up of the magazine renders reading difficult, especially in its use of the same type for the titles of illustrations as for the body of the text. The very sensational fiction of this number is cordially recommended to deep medical thinkers as a superb relaxation.

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It is a source of genuine regret to us not to be able to recall the name of the author to whom we are indebted for the story of the philosopher and his wife who had fresh mushrooms for dinner the day before they were evicted for nonpayment of rent. A couple so undeserving of mercy strikes every sympathetic chord in our heart.

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The Autobiography of A Neurasthenic, in the December *American*, makes good reading for the physician, for it shows how the laity sometimes regard the profession. The Door of Understanding, by Octavia Roberts, contains a Dr. Herrick, who "radiates cheerfulness," a commendable practice in a family physician; he also hastily computes for an anxious mother that if her baby continues to gain in weight as he has during his first three weeks, he will weigh over 7,000 pounds by the time he is twenty-one years old. Man's Redemption of Man is an essay by Professor William Osler, in which he states that, of all the triumphs of science, that of the medical profession over pain is the greatest. He cites the statement that no animal in a wild state suffers a natural death. We are inclined to call a mode of death that is absolutely without exception a natural one. Professor Osler restates our extraordinary indebtedness to the Greeks, something that those bent on abolishing Greek from our schools ought to be constantly reminded of. In the Interpreter's House, supposed to be the opinions of Mr. Dooley, without the brogue, is always an interesting and thought compelling department.

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There are several very appetizing prescriptions for Christmas dinner in the *Ladies' Home Journal* for December 1st, but some omit both turkey and plum pudding, which seems irreverent. Contrary to current ideas, both these articles of diet are very digestible and make an admirable meal for people likely to overeat; replacing them, as Mrs. Rorer has done in one instance, by salmon, sweetbreads, and duck is not only a weak cession to epicures who are merely self styled such, but dangerous alike to young stomachs and old red kidneys.

NEW PUBLICATIONS.

Crossen, Harry Sturgeon.—Diagnosis and Treatment of Diseases of Women. Second Edition, Revised and Enlarged. With Seven Hundred and Forty-four Engravings. St. Louis: C. V. Mosby Company, 1910. Pp. xxix-1025.

Chapin, Charles V.—The Sources and Modes of Infection. First Edition. First Thousand. New York: John Wiley & Sons; London: Chapman & Hall, 1910. Pp. ix-

Index Catalogue of the Library of the Surgeon General's Office, United States Army. Authors and Subjects. Second Series. Volume XV. S. to Skin Grafting. Washington: Government Printing Office, 1910. Pp. 777.

Vecki, Victor G.—The Prevention of Sexual Diseases. With Introduction by William J. Robinson, M. D. New York: The Critic and Guide Company, 1910. Pp. 132 (Price, $1.50.)

Butler, George F., Favill, Henry B., and Bridge, Norman.—The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M. D., and Charles L. Mix, A. M., M. D. Volume VIII. Materia Medica and Therapeutics, Preventive Medicine, and Climatology. Chicago: The Year Book Publishers, 1910. Pp. 380. (Price, $1.50.)

Kieslinger, Emilie, und Wirth, Karl.—Die Krankenkost. Ein praktisches Handbuch für Aerzte, Kranken- und Wohlfahrtsanstalten, Sanatorien, Pflegepersonen, Erziehungsanstalten und für die Familie. München: J. F. Lehmann, 1910. Pp. x-250.

Taylor, J. J.—Directions for Using the Physician's Pocket Account Book and Practical Advice for Professional Success. Copyright 1909. Philadelphia: The Medical Council, 1910. Pp. 212.

Scheube, B.—Die Krankheiten der warmen Länder. Ein Handbuch für Aerzte. Vierte umgearbeitete und erweiterte Auflage. Mit 5 geographischen Karten, 1 Tafel und 142 Abbildungen im Texte. Jena: Gustav Fischer, 1910. Pp. viii-1072.

Rohleder, Hermann.—Die Zeugung beim Menschen. Eine sexualphysiologische Studie aus der Praxis. Mit Anhang: Die künstliche Zeugung (Befruchtung) beim Menschen. Leipzig: Georg Thieme, 1911. Pp. xi-289.

Von Noorden, Carl.—Sammlung klinischer Abhandlungen über Pathologie und Therapie der Stoffwechsel- und Ernährungsstörungen. 9. und 10. Heft. Die Vagotonie. Eine klinische Studie von Privatdozent Dr. Hans Eppinger und Dr. Leo Hess (Wien). Berlin: August Hirschwald, 1910. Pp. 99.

Weiss, Richard.—Manual of Clinical Pathology. For the General Practitioner. Comprising Examination of Urine, Stomach Contents, Fæces, Blood, and the Serum Diagnosis of Syphilis, Tuberculosis, Typhoid Fever, etc. In Collaboration with George Herschell, M. D., London, and Andrew Charles, F. R. C. S., Dublin. London: J. & A. Churchill, 1910. Pp. 72. (Price, 2s.)

Lindsay & Blakiston's Physician's Visiting List for 1911. Sixtieth Year of its Publication. Philadelphia: P. Blakiston's Son & Co., 1910.

Miscellany.

Pygopagus.—Boswell reports the birth of a pygopagus in the *British Medical Journal* of November 12, 1910, born last March at Lowestoft, in the county of Suffolk, England; the mother being a young English woman, aged twenty-one. "The birth of the specimen was not extremely difficult. The head of the smaller child presented in the left occipital anterior position, but did not come down at first, although forceps easily delivered it. On traction being made one was able to diagnosticate the condition by tearing the two children apart. Once the breach of the first child was delivered the second child followed quite easily. The two children were seen to be alive during the labor, but expired before birth was complete. The weight of the specimen was six and three quarter pounds. The mother stated she had been pregnant almost nine months. The specimen consisted of two small children, which were joined together from their nipples downward. One child showed a condition of hydrops cranii, otherwise they appeared to be perfectly formed above the diaphragm, each having perfectly formed upper extremities. There was a single placenta, with a single cord attached to the monster. Each child had one fully formed leg, but beside these there was one finshaped appendage, which appeared to be two legs fused into one, making three lower extremities in all. There was one cloacal aperture, consisting of an upper portion which was apparently connected with a single bipartite uterus inside, with fully formed Falloppian tubes and ovaries, while the lower portion was apparently connected with a single rectum. There was also what appeared to be an attempt at the formation of two more ovaries and tubes further behind on the back wall. Each child had a fully formed stomach and duodenum, lying below two separate livers, which were fused in the middle line and are torn apart. Above the liver was a separate diaphragm in each case. Each child had separate large and small intestines, with a cæcum, and one well formed appendix; they joined into a common rectum, which lead to a common anus, which was imperforate, the bowel being distended above. The four kidneys were separate, with four separate ureters, which all lead down to the space in front of the uterus and ended blindly. There was no formed bladder, but at the upper end of the cloaca there was a small fungating mass, which looked somewhat like an extroversion of the bladder. Each child had a well formed spleen, but in the case of the child with the deformed head it was on the right side of the body. The organs within the thorax seemed normal, except that the child with the deformed head had an enlarged heart, with no ventricular septum. The thymus gland in both children was large."

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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending December 2, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Manila	Oct. 9-15	2	1
Philippine Islands—Ambos Camarines	Oct. 9-15	12	7
Philippine Islands—Batangas	Oct. 9-15	48	34
Philippine Islands—Bulacan	Oct. 9-15	16	15
Philippine Islands—Ilicos Sur	Oct. 9-15	54	34
Philippine Islands—Nueva Ecija	Oct. 9-15	18	13
Philippine Islands—Rizal	Oct. 9-15	3	2
Philippine Islands—Tarlac	Oct. 9-15	10	6
Philippine Islands—Tavabas	Oct. 9-15	10	8
Cholera—Foreign.			
Arabia—Muscat	Oct. 19-25	7	7
Austria-Hungary	Oct. 16-29	34	
China—Hankow	Oct. 16-22	1	
India—Bombay	Oct. 19-25		1
India—Calcutta	Oct. 2-8		15
India—Madras	Oct. 15-21		8
India—Negapatam	Sept. 17-30		20
India—Rangoon	Oct. 9-15		1
Indo-China—Saigon	Oct. 4-10	2	2
Italy—Caserta, province	Oct. 30-Nov. 5	16	18
Italy—City of Naples, Naples	Oct. 30-Nov. 5		
Italy—General	Nov. 17-23	44	5
Italy—Girgenti, province	Oct. 30-Nov. 5	3	
Italy—Lecce, province	Oct. 30-Nov. 5	10	2
Italy—Palermo	Oct. 30-Nov. 5	8	4
Italy—Salerno	Oct. 30-Nov. 5	4	
Italy—Sezze, Rome	Oct. 30-Nov. 5	3	1
Italy—Terracina, Rome	Oct. 30-Nov. 5	3	1
Japan—Kobe	Oct. 17-30	156	83
Japan—Kyoto	Oct. 1-15	150	
Japan—Nagasaki	Oct. 17-23	1	
Japan—Osaka	Oct. 23	802	
Java—Batavia	Oct. 9-15	8	1
Korea—Phong Yang	To Oct. 2	70	40
Siam—Bangkok	Sept. 12-Oct. 8	82	82
Straits Settlements—Singapore	Oct. 2-8	1	1
Turkey in Asia—Bagdad vilayet	Oct. 24-30	191	177
Turkey in Asia—Beirut	Oct. 30-Nov. 5	7	3
Turkey in Asia—Saloniki	Nov. 18		1
Turkey in Asia—Trebizond	Oct. 24-30	15	9
Turkey in Asia—Zongouldak	Oct. 24-30	14	18
Yellow Fever—Foreign.			
Venezuela—Caracas	Oct. 30-Nov. 12	3	1
Plague—Foreign.			
Brazil—Bahia	Aug. 20-Sept. 30	23	23
Brazil—Rio de Janeiro	Sept. 26-Oct. 30	3	1
India—Bombay	Oct. 19-25		12
India—Calcutta	Oct. 2-8		7
India—Kurrachee	Oct. 19-25	4	5
India—Rangoon	Oct. 9-15		3
Indo-China—Saigon	Oct. 10-16	3	
Peru—Callao	Oct. 1-31	5	4
Peru—Mollendo	Oct. 4-18		Present
Portugal—Lisbon	Oct. 24-Nov. 2	6	1
Turkey in Asia—Adalia	Oct. 6	2	
Venezuela—Caracas	Oct. 20-Nov. 12	11	9
Smallpox—United States.			
Florida—Duval County	Nov. 13-19	1	
Florida—Escambia County	Nov. 13-19	1	
Florida—Gadsden County	Nov. 13-19	6	
Florida—Leon County	Nov. 13-19	9	
Florida—Polk County	Nov. 13-19	5	
Indiana—Marion County	Sept. 1-30	1	
Iowa—Cass County	Oct. 1-31	2	
Iowa—Linn County	Oct. 1-31	4	
Iowa—Plymouth County	Oct. 1-31	2	
Iowa—Polk County	Oct. 1-31	4	
Louisiana—New Orleans	Nov. 12-18	9	1
Oregon—Jackson County	Sept. 1-30	1	
Oregon—Multnomah County	Sept. 1-30	11	
Smallpox—Foreign.			
Brazil—Bahia	Aug. 20-Sept. 30	84	58
Brazil—Rio de Janeiro	Sept. 26-Oct. 30	12	
Canada—Halifax, Nova Scotia	Nov. 6-19	8	
Canada—Ottawa, Ontario	Nov. 13-19	1	
Ceylon—Colombo	Oct. 9-15	6	
China—Shanghai	Oct. 17-23		10
Egypt—Cairo	Oct. 22-Nov. 4		1
France—Paris	Oct. 23-Nov. 5	4	
Germany—General	Oct. 30-Nov. 5	1	
India—Bombay	Oct. 19-25		1
India—Calcutta	Oct. 2-8		1
India—Madras	Oct. 15-21		2
Indo-China—Saigon	Oct. 3-16	19	14
Japan—Kobe	Oct. 23	1	
Malta—Valetta	Oct. 16-Nov. 5	7	
Peru—Salaverry	Oct. 26-Nov. 1	1	
Portugal—Lisbon	Oct. 24-30	47	
Russia—Libau	Oct. 30-Nov. 6	2	
Russia—Moscow	Oct. 16-29	18	21
Russia—Riga	Oct. 24-Nov. 5	16	
Russia—St. Petersburg	Oct. 23-29	29	
Russia—Warsaw	Sept. 11-17		2
Spain—Madrid	Oct. 1-31		1
Straits Settlements—Singapore	Oct. 2-15	9	2
Turkey in Asia—Beirut	Oct. 23-Nov. 5	12	

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending November 30, 1910:

ANDERSON, J. F., Passed Assistant Surgeon. Directed to inspect the Saranac Laboratory for the Study of Tuberculosis, Saranac Lake, N. Y.

ATILES, P. DEL VALLE, Acting Assistant Surgeon. Granted thirty days' leave of absence from December 1, 1910.

BAHRENBURG, L. P. H., Passed Assistant Surgeon. Granted eleven days' leave of absence from November 10, 1910, on account of sickness.

BANKS, C. E., Surgeon. Leave of absence granted for four days from November 19, 1910, amended to read seven days from November 22, 1910.

COFER, L. E., Assistant Surgeon-General. Granted six days' leave of absence from November 28, 1910.

FRICKS, L. D., Passed Assistant Surgeon. Granted one day's leave of absence November 29, 1910.

FROST, W. H., Passed Assistant Surgeon. Directed to rejoin station at Washington, D. C., stopping at Des Moines, Iowa, for conference with Secretary of State Board of Health.

GAHN, HENRY, Pharmacist. Granted one day's leave of absence, November 19, 1910, under paragraph 210, Service Regulations.

GRUBBS, S. B., Passed Assistant Surgeon. Granted seven days' leave of absence from November 28, 1910, on account of sickness.

GUSTETTER, A. L., Acting Assistant Surgeon. Granted fifteen days' leave of absence from December 9, 1910.

HAMILTON, H. J., Acting Assistant Surgeon. Granted three days' leave of absence from November 16, 1910

HOTCHKISS, S. C., Assistant Surgeon. Relieved from duty on the Revenue Cutter *Bear* and directed to report to the Director of the Hygienic Laboratory.

LEECH, HARRY D., Pharmacist. Directed to proceed to Stapleton, N. Y., and report to the medical officer in command for duty and assignment to quarters.

LYON, R. H., Assistant Surgeon. Granted two days' leave of absence, November 18-19, 1910, under paragraph 191, Service Regulations.

MCINTOSH, W. P., Surgeon. Leave of absence granted October 22, 1910, amended to read seventeen days from November 11, 1910.

MEGAW, H., Pharmacist. Granted twenty-five days' leave of absence from November 9, 1910.

MORRIS, G. A., Pharmacist. Relieved from duty at St. Louis, Mo., and directed to proceed to Chicago, Ill., and report to the medical officer in command for duty and assignment to quarters.

RYDER, L. W., Pharmacist. Relieved from duty in the bureau and directed to report to the Director of the Hygienic Laboratory.

SPANGLER, L. C., Pharmacist. Relieved from duty at the Hygienic Laboratory and directed to report to Assistant Surgeon-General W. J. Pettus, in charge of Marine Hospital Station, Washington, D. C.

Tarbell, B. C., Acting Assistant Surgeon. Granted thirty days' leave of absence from December 1, 1910.

Van Ness, G. I., Jr., Pharmacist. Relieved from duty at Chicago, Ill., and directed to proceed to St. Louis, Mo., and report to the medical officer in command for duty and assignment to quarters. Granted three days' leave of absence from November 18, 1910, under paragraph 210, Service Regulations.

White, J. H., Surgeon. Leave of absence granted for ten days from November 11, 1910, amended to read eight days from November 13, 1910.

Appointment.

Harri D. Leech appointed a pharmacist of the third class, November 17, 1910.

Board Convened.

Board of medical officers convened to meet at Angel Island, Cal., for re-examining an alien. Detail for board: Passed Assistant Surgeon F. E. Trotter, chairman; Passed Assistant Surgeon M. W. Glover; Assistant Surgeon A. J. Lanza, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 3, 1910:

Brown, H. L., Captain, Medical Corps. Left Fort Morgan, Alabama, on ten days' leave of absence.

Brown, Wilmont E., Lieutenant, Medical Reserve Corps. Relieved from duty at Army General Hospital, Fort Bayard, New Mexico, and ordered to proceed to his home; will stand relieved from further active duty in the Medical Reserve Corps, to take effect upon his arrival at his home.

Candy, Charles M., Lieutenant Colonel, Medical Corps. In addition to his duties as Chief Surgeon, Department of California, will assume the duties of medical superintendent, Army Transport Service, San Francisco, California, relieving Lieutenant Colonel Henry S. T. Harris, Medical Corps.

Dougherty, James C., Lieutenant, Medical Reserve Corps. Reported for temporary duty at Fort Huachuca, Arizona; left Fort Bliss, Texas, November 25th.

Eber, Albert H., Lieutenant, Medical Reserve Corps. Ordered to proceed to Fort Moultrie, S. C., to Fort Dade, Florida, for temporary duty, during the absence of 1st Lieutenant John H. Hereford, Medical Reserve Corps.

Haverkampf, C. W., Lieutenant, Medical Corps. Reports departure on ten days' leave of absence.

Jenkins, Frederic E., Lieutenant, Medical Reserve Corps. Will report for duty with Co. I, Signal Corps, en route to Fort D. A. Russell, Wyoming; upon completion of this duty to return to station at Fort Leavenworth, Kansas.

Miller, E. W., Captain, Medical Corps. Granted leave of absence to and including December 25, 1910.

Stone, John H., Major, Medical Corps. Granted four months' leave of absence with permission to go beyond the seas.

Usher, F. M. C., Major, Medical Corps. Granted fourteen days' leave of absence.

Weed, Frank W., Captain, Medical Corps. Granted one month's leave of absence to take effect about December 15, 1910.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 3, 1910:

Allen, D. G., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the *Elcana.*

Bloedorn, W. A., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to the *Monterey.*

Bunker, C. W. O., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from September 21, 1910.

Ely, C. F., Passed Assistant Surgeon. Detached from the *Wilmington* and ordered home.

Hale, G. D., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from September 21, 1910.

Hibbett, C. T., Medical Director. Commissioned a medical director from October 7, 1910.

Higgins, M. E., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from October 4, 1910.

Minter, J. M., Assistant Surgeon. Detached from the *Monterey* and ordered to the *Wilmington.*

Pickrell, G., Medical Inspector. Commissioned a medical inspector from October 7, 1910.

Sausser, H. E., Pharmacist. Ordered to duty at the Naval Hospital, Annapolis, Md.

Stanley, A. C., Assistant Surgeon. Transferred to the retired list from November 23, 1910.

Stone, E. P., Medical Inspector. Commissioned a medical inspector from August 24, 1910.

Trible, G. B., Passed Assistant Surgeon. Commissioned a passed assistant surgeon from June 27, 1910.

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Births, Marriages, and Deaths.

Died.

Cheslett.—In Chicago, on Tuesday, November 22d, Dr. H. G. Cheslett, aged forty-four years.

Cringan.—In Richmond, Virginia, on Monday, November 21st, Dr. J. W. Cringan, aged thirty-three years.

Cunningham.—In Big Sandy, Tennessee, on Tuesday, November 22d, Dr. R. R. Cunningham.

Da Costa.—In Philadelphia, on Tuesday, December 6, 1910, Dr. John C. Da Costa, aged seventy-six years.

Emery.—In Ottawa, Ontario, on Thursday, November 24th, Dr. G. F. Emery, aged forty-four years.

Geiger.—In Calhoun County, near Saint Matthews, South Carolina, on Wednesday, November 30th, Dr. F. J. Geiger, aged seventy-five years.

Gray.—In San Antonio, Texas, on Thursday, November 24th, Dr. R. Q. Gray.

Green.—In North Vernon, Indiana, on Tuesday, November 22d, Dr. James H. Green, aged fifty-one years.

Haller.—In Brooklyn, New York, on Saturday, December 3d, Dr. John F. Haller, aged forty-eight years.

Hanna.—In Henderson, Kentucky, on Monday, November 28th, Dr. William M. Hanna, aged seventy-three years.

Heard.—In North East, Pennsylvania, on Thursday, November 24th, Dr. Amos B. Heard, aged seventy-five years.

Herter.—In New York, on Monday, December 5th, Dr. Christian Archibald Herter, aged forty-five years.

Hutchinson.—In St. Paul, Minnesota, on Thursday, December 1st, Dr. Henry Hutchinson, aged sixty-one years.

Jakes.—In San Francisco, California, on Sunday, November 20th, Dr. R. W. Jakes, aged forty years.

King.—In Butler, Pennsylvania, on Saturday, November 26th, Dr. John H. King, aged sixty-seven years.

Marsden.—In Red Bank, New Jersey, on Tuesday, November 22d, Dr. George F. Owen Marsden, aged sixty-four years.

Mitchell.—In Philadelphia, Pennsylvania, on Thursday, November 24th, Dr. Charles L. Mitchell, aged fifty-nine years.

Moore.—In Camden, South Carolina, on Saturday, November 26th, Dr. A. A. Moore, aged seventy-six years.

Munroe.—In Newark, New Jersey, on Monday, November 28th, Dr. Francis H. Munroe, aged forty-eight years.

Nock.—In Rome, New York, on Monday, November 28th, Dr. Thomas G. Nock, aged fifty-one years.

O'Bar.—In St. Louis, Missouri, on Tuesday, November 22d, Dr. John H. O'Bar, aged thirty-nine years.

Shenk.—In Lititz, Pennsylvania, on Wednesday, November 23d, Dr. John Henry Shenk, aged seventy-two years.

Sherwin.—In Suffield, Connecticut, on Tuesday, November 22d, Dr. A. Procter Sherwin, aged fifty-one years.

Stiles.—In Hillview, New York, on Saturday, November 19th, Dr. C. B. Stiles, aged forty-nine years.

Todd.—In Philadelphia, on Friday, November 25th, Dr. A. R. Todd, aged fifty-eight years.

Van Slyke.—In St. Paul, Minnesota, on Wednesday, November 23d, Dr. F. W. Van Slyke, aged fifty-three years.

Van Syckle.—In Hackettstown, New Jersey, on Tuesday, November 22d, Dr. Alvah Coit Van Syckle, aged fifty-seven years.

Walsh.—In Philadelphia, Pennsylvania, on Sunday, November 27th, Dr. John H. Walsh, aged thirty-four years.

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Original Communications.

CERTAIN ASPECTS OF RHINOLARYNGOLOGY AND THEIR RELATION TO GENERAL MEDICINE.[*]

BY H. ARROWSMITH, M. D.,
Brooklyn, N. Y.,

Consulting Laryngologist to the Long Island State Hospital; Laryngologist to the Kings County Hospital and the Brooklyn Hebrew Orphan Asylum; Surgeon to the Brooklyn Eye and Ear Hospital, Nose and Throat Department.

From time to time it harms none of us to be reminded that there are other worlds outside the orbits of our own and to pause for a while and learn what is happening in circles beyond our own immediate sphere of activity. A recent article in the *Journal of the American Medical Association* on The Foibles of Specialism will repay careful perusal and quiet meditation. While the author indicates with rather trenchant pen and only too truly, many of the shortcomings of the specialist and medical author, he would have been fairer had he, as a corollary, criticized some of the characteristics of the average generalist that we in turn have appreciated and deplored.

Where there is so close a mutual interdependence as exists between the various tissues and organs of the human body it is difficult to state with any exactitude where the influence of any one part commences or ceases to affect its neighbors, or to define absolutely the territory which should by right belong to the individual who devotes himself to some particular subdivision of the healing art. This in itself constitutes a most eloquent plea for a greater harmony of effort between the generalist and the specialist.

Perhaps in no department of medical practice is there a greater need for such a coalition than in the domain of rhinolaryngology, for in this particular field there has been a most woeful lack of apparent understanding of the importance of remote causes in the production of local symptoms; and the converse of this proposition is equally true. It is a common experience to hear the profession as well as the laity express scepticism as to the curability of the symptom complex which they group together under the name of "catarrh," and unfortunately this lack of faith is often justified by the results obtained by those whose efforts are confined to exclusively local treatment of these symptoms, by topical applications and surgical measures. That this is the result of inadequate preparation and training on the part of the so called specialist is true in many instances, and because systemic disturbances are overlooked or ignored, the local measures both medical and surgical, employed in the treatment of diseases of the nose and throat and their accessory parts are often unsatisfactory or entirely unsuccessful and sometimes productive of permanent injury, to the chagrin of the patient, his family physician, and the special worker whom he has consulted. Just here we see a striking example of the "vicious circle" we so often speak of.

This subject in its entirety is far too large to be even touched on in a paper as short as this must be, but there are several matters of great interest to the specialist and of equal importance to the generalist that it may be not entirely valueless to bring to your attention.

We see constantly a great many patients who, without any characteristic lesion or gross anatomical abnormality, suffer exceedingly from a train of symptoms of which those located in the upper air passages are the most annoying and the most resistant to treatment, the so called nasopharyngeal catarrhs. Most of the responsibility for these catarrhal troubles of the nose and throat is attributed to our changeable and trying climate, which a patient once rather aptly described as "not a climate, but only samples of weather," the determining cause, being any temporarily active source of local irritation or infection. This theory has been responsible for the time honored bugbear, so universally dreaded—"catching cold" and the many injurious practices resulting from a superstition so obviously false when logically analyzed.

The constant factors in the causation of catarrhal troubles and acute "colds" are to be sought and found within the patient himself, or in artificial conditions by which he is voluntarily and often ignorantly placed. These comprise unsuitable clothing, especially the wearing of woolen underclothes, the underventilating and overheating of dwelling houses and offices and, worse than the excessive temperature, the entire disregard of proper humidification of our indoor atmosphere. Every practitioner should read, if he has not done so, the article by Henry Mitchell Smith, Indoor Humidity (*Heating and Ventilating Journal*, August and September, 1903), as well as A Plea for the Prevention of Adenoids, by John E. Sheppard (*Long Island Medical Journal*, September, 1910).

Of the greatest importance, however, are the almost universal dietetic sins, of which most of us are guilty, with their resultant strain of disorders, digestive, assimilative, eliminative, and nutritive.

Beyond casual mention of these most important

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[*] Read at the November, 1910, meeting of the Medical Society of the County of Kings.

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matters as possible elements in the causation of disturbances in the upper air tract, practically no attention is given them in the treatises on medicine, in society proceedings, or in periodicals. During nearly twenty-five years of laryngological work, I can recollect only three authors who have attempted to deal with this question as its importance deserves: Our fellow member, Dr. French, has written on the relation of chronic diseases of the nose and throat to disorders of digestion: Beverley Robinson on dyspepsia as reflected in the mucous membrane of the upper air passages: and Stucky, of Lexington, Ky., on autointoxication as a factor in the causation of pathological conditions in the ear, nose, and throat. We can state as an axiom that the nonspecific acute inflammations of the nose and throat and the phenomena of "taking cold" are never due to exposure and never occur unless the patient is in a condition of perverted metabolism. The patients who consult us for these disturbances are almost invariably overclad, overfed, and underexercised and under aerated. Our own personal experience has shown us all that, when on a hunting trip, or leading an active out of door life, we can undergo without ill effect almost any amount of exposure to wind, cold, and dampness.

Consequently the correction of digestive derangements will do far more in curing these local symptoms than any amount of topical treatment, but this means more than an occasional dose of calomel and a little pepsin and hydrochloric acid for a few days. In these cases a capable gastroenterologist can be of far more help than the most expert rhinologist. Directly in line with this is the management of hay fever, reflex asthma, and spasmodic cough. Many of our experts report brilliant and, judging from what they say, habitual cures of these disorders by some of the modern intranasal surgical procedures, and another cult professes to banish these troubles, in the absence of gross nasal deformities, by strict adherence to the absurd teachings of Haig, as to diet and therapy. While in some instances, these conditions are undoubtedly the direct result of lesions within the nose or its accessory cavities, it is a common experience to encounter patients whose nasal chambers contain examples of every conceivable variety of distortion and pathological change, but whose sole complaint is of obstruction to nasal breathing. On the other hand a single minute polyp or a small ridge or a very moderate septal deviation may make its possessor a martyr to hay fever or spasmodic cough or asthma. Some peculiar idiosyncrasy alone can explain the susceptibility of certain individuals to irritation of the so called sensitive areas, and, as Killian says, the symptom complex depends not on the amount of irritation, but on the degree of hyperæsthesia. That this is not always due to demonstrable lesions is evidenced by the fact that a definite something will always precipitate an attack in a given patient, while he may be immune to many agents which will with equal regularity cause explosions in other persons. So it is apparent that these "reflex" troubles are largely dependent on some inherent or acquired instability of the nervous system and, here, again, intelligent cooperation between the generalist and the rhinologist may accomplish results impossible to either alone.

The most important laryngological achievement of recent years has met with very scant recognition at the hands of the generalist, both medical and surgical, and their indifference to availing themselves and their patients of its valuable aid, unless explained by ignorance of the existence of such a procedure, is little short of culpable. Endoscopy of the air passages, including the finer branches of the bronchial tubes and incidentally of the œsophagus and stomach was originated by Killian, of Freiburg, and, as developed by him and our distinguished fellow countryman, Jackson, of Pittsburgh, this procedure has been already of enormous benefit, and when its value is more generally appreciated and its help more frequently employed, it will take its deserved position as one of the indispensable methods of exact diagnosis and efficient treatment. As yet its most striking triumphs have been won in the location and extraction of foreign bodies from the air passages and gullet. Pins, needles, seeds, and beans, fragments of bone and meat, tooth plates, and every conceivable variety of material of a size possible to be inhaled or swallowed have been extracted under direct control of the eye from the œsophagus, the trachea, and the lower divisions of the bronchi, without external operation, and scores of lives have been saved which must have been lost had external surgery been the only resource.

Coincidently with the improvement in technique this procedure is constantly becoming more available as a means of diagnosis and as affording a method of direct inspection and treatment of lesions of the trachea, bronchi, œsophagus, and stomach. Œsophagotomy for foreign bodies, malformations, strictures, and new growths is now rarely necessary and should, at all events, always be preceded by direct ocular examination. The hit or miss instrumentation of the œsophagus, particularly with the old time probang, is, in the light of our present resources, absolutely inexcusable and indefensible, as is also the expectant treatment of foreign bodies, either inhaled or swallowed. The history of a recent case conveys its lesson without further comment:

Case. A female child, about three years of age, was referred to me on August 1, 1910. She had always been delicate, and during the summer of 1909 had an attack of infantile paralysis. During her convalescence, in October, 1909, the nurse maid gave her a large brass collar button to play with, which she put in her mouth and swallowed. She was immediately seized with dyspnœa and dysphagia and regurgitation of fluids through the nose. The urgent symptoms abated somewhat in a few days and the parents assumed that the foreign body had passed into the stomach. From this time on she failed steadily, was able to swallow solids and fluids only with difficulty. She had a severe cough, with frequent choking spells, and became weak and emaciated.

With the idea that this debility was the consequence of her severe illness, and that the cough and dyspnœa might indicate some tuberculous trouble, she was treated with tonics and sent out of the city. During the latter part of her illness the sputum contained pus and blood. On July 31, 1910, ten months after swallowing the button, Dr. Eastmond located it, by radiography, at the level of the first rib. The child was *in extremis*, but I determined on an attempt at extraction, which was made August 3d, the patient succumbing before anæsthesia was complete. The œsophagoscope was halted by a resistant mass of inflammatory tissue above the button, which, however, could be readily felt and engaged by a hook. No amount of force could dislodge it. It was removed post mortem, through an external incision. The lower and larger disc had ulcerated through into the trachea and the part which was still within the œsophagus was almost surrounded by a thick and very tough encysting wall, so that with no regard to the amount of force employed, it was only dislodged with considerable difficulty. The celluloid back had disappeared. At any time within a few days or perhaps even weeks of its ingestion, extraction through the natural passages under direct inspection, would have been comparatively easy.

Special periodical literature, during the last few years, has contained numerous reports of observations of a disease which has been shown to be of great clinical importance, but of which nothing is said in the textbooks and with which most of the general practitioners seem to be entirely unacquainted, though statistics and my own personal experience would indicate that it is by no means of rare occurrence. Vincent's angina, or ulceromembranous sore throat, first described in our language by Emil Mayer, of New York.

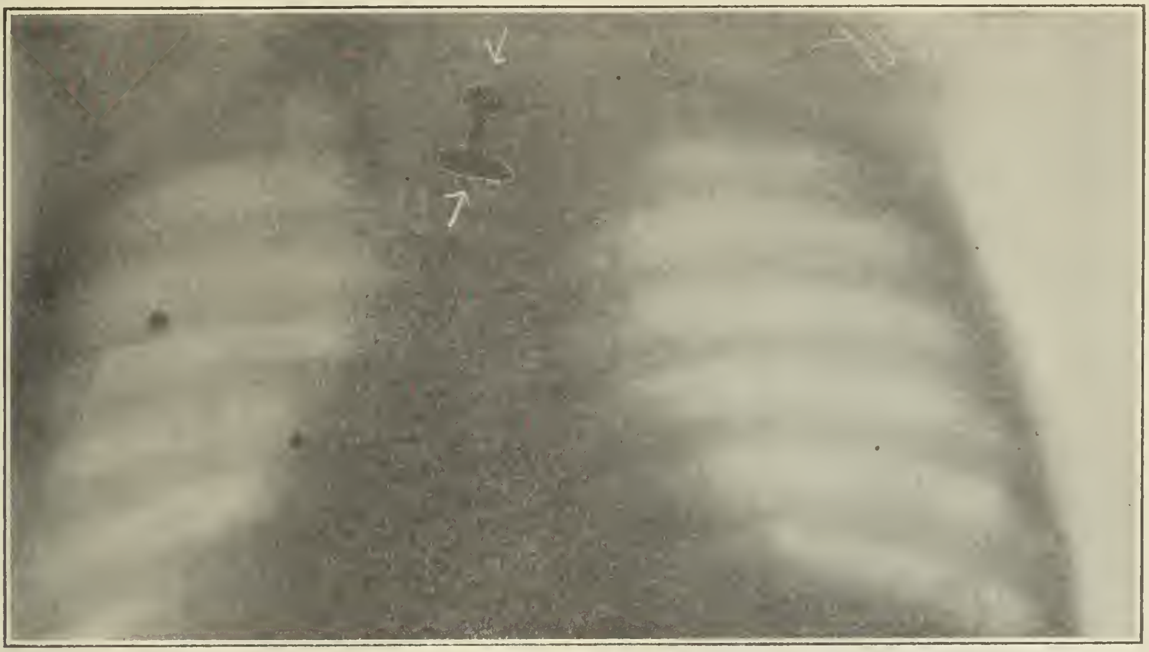

Fig. 1.—Collar button impacted in œsophagus.

This disease is characterized by the formation of a membranous exudate on the parts involved, with erosion or ulceration of varying extent in the subjacent tissues, by more or less pronounced implication of the neighboring glands, ordinarily by extreme pain and by constitutional disturbances of irregular severity. Any extent of surface may be involved, and in the severe cases the soft parts and even cartilage and bone may be absolutely destroyed to the point of menacing life or bringing about a fatal issue.

I have seen the larynx alone involved in two instances, and Bothwell reports three cases in which the disease was confined to the bronchial tubes. (*Journal of the American Medical Association*, June 4, 1910.)

The causative agent is infection by two bacterial forms, an association of which is essential to the production of the disease: the fusiform bacillus and the spirillum of Vincent. The disease is mildly contagious, but transmission implies rather close personal contact. Fraley (*Journal of the American Medical Association*, May 7, 1910) reports the infection of nine children, inmates of the same institution, from using a common drinking glass.

It is to be distinguished from dipththeria and syphilitic lesions, to both of which, at certain stages, it has a very close resemblance. At first, during the stage of exudation, the similarity to diphtheria is striking and the fact that cultures made from this exudate will show absolutely nothing, may explain many negative reports for which the health department bacteriologists have perhaps been unjustly condemned. All attempts to propagate these bacteria in pure culture have failed, and they are to be identified only in smears or in sections made from the exudate in mass. I have seen, or rather recognized, eight cases. M. I. Holm (*Journal of the Michigan State Medical Society*, August, 1910) analyzes 265 bacteriological examinations for suspected diphtheria, made in the laboratory of the Michigan State Board of Health. In this series, characteristic germs of diphtheria were found 118 times and the bacteria of Vincent's angina 73 times, the latter only when direct smears were made. The clinical diagnoses in these cases of Vincent were: Diphtheria, 28 times; suspicious, 20 times; amygdalitis, 17 times; Vincent's angina, 5 times; and scarlet fever, once. In the 265 cases diphtheria was the diagnosis, on clinical grounds, in ninety-nine. Bacteriological examination of these ninety-nine cases showed diphtheria in sixty-four and the characteristic germs absent in thirty-five. Among the seventy-three cases of Vincent, diphtheria was diagnosticated clinically 28 times and, of these, in only one case were the bacteria of diphtheria present, which corroborates the observations of other authors, that in the presence of the fusiform bacillus and the spirillum of Vincent, diphtheria can be practically excluded. This analysis probably indicates approximately the frequency with which Vincent's angina is mistaken for diphtheria and it may furnish some explanation of the not infrequent disagreeable and serious results of the administration of diphtheria antitoxine, as well as shed some light on the question of anaphylaxis in this field.

The duration of the disease may be from a few days to an indefinite time, cases being on record which have been protracted for months.

Treatment has been in my own experience and in that of others very unsatisfactory.

It would seem that the routine examination of smears in suspected but unconfirmed cases of diphtheria would in time teach us a great deal about a presumably rather common and potentially very serious disorder. I emphasize this here, because I am sure that the general practitioner has far greater opportunity for investigating this particular point than the laryngologist.

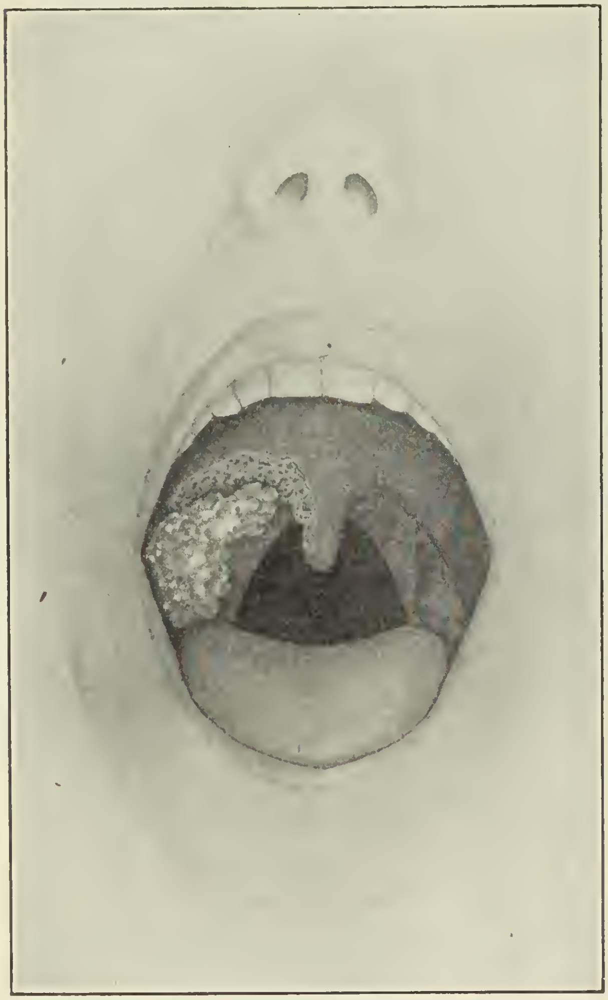

Fig. 2.—Vincent's angina.

"All roads lead to Rome," and the patient listener knows that before a laryngologist can conclude any remarks to a general society, he will, of necessity, have to say something about the tonsil.

It happens that I have a very great deal to say, but I will epitomize it as much as possible. The treatment of the faucial tonsil is just at present, I believe, the most vital issue of laryngology in its relation to general medicine. We know to-day exactly as much or as little about the tonsil and its functions as we have ever done; but in spite of our ignorance and without any apparent regard to the degree of potential injury we may inflict on our patients by entirely depriving them of its possible value in the general economy, we laryngologists embarked several years ago on the saturnalia of extermination of this innocent, and perhaps indispensable organ, that some of us are very likely ultimately to seriously regret, and because of which many of our patients may, in the future, ask us very embarrassing questions. "Innocent," in this connection is used advisedly, for those who have attributed to the tonsil responsibility for systemic infections of every conceivable kind and degree have fallen far short of proving their contention. In the course of time and with more definite knowledge, its "indispensability" is also likely to be established, at least during a certain period of life.

Conclusions on matters of so much importance are not to be reached through an experience of a few hundred observations, nor in a limited space of time, but by careful analysis of thousands of cases followed for a long period by observers, both clinical and laboratory, who are looking for the truth and are not intoxicated by their success in having acquired a certain dexterity in the technique of a decidedly difficult surgical procedure. It is a fact that the most enthusiastic reports of any recent surgical discovery, as a rule, come from the tyro and the inexperienced. Our present American methods of routine enucleation of the tonsils have called forth almost universal condemnation from old world laryngologists as unnecessary and unjustifiable, to my mind most deservedly. It is, however, an encouraging sign of a healthy reaction that some of our countrymen give evidence again of being swayed rather by their judgment than their emotions, by the publication of such articles as The Truth about Tonsils and Adenoids, by J. W. Jervey (*Journal of the American Medical Association,* May 14, 1910); Indiscriminate Enucleation of the Tonsils, by Percy Fridenberg (*New York Medical Journal,* January 1, 1910), and Enucleation of the Faucial Tonsils, Its Difficulties and Contraindications, by B. B. Shurly, of Detroit (*Journal of the American Medical Association,* October 29, 1910). The probably well meant, but certainly misdirected crusade of the Department of Health through its school inspectors against all discernible tonsils, is now and will be in the future, productive of a great deal of harm; although to be fair, on the other hand, a great deal of good has, beyond question, resulted from it. The suggestion that occurs to me is that their instructions to the pupils or their parents should be not: "These tonsils must be removed," but "Have your throat examined and learn whether or not removal of your tonsils is advisable; if so, have it done." At present the situation is like the old Donnybrook Fair. Where you can see a tonsil—out with it.

From laboratory reports, which have described with extreme minuteness the invasion of the tonsillar crypts by bacteria of all kinds, we have been prone to reason clinically to their penetration beyond the tonsillar capsule with resulting general infection of almost any sort or degree, but in very few autheticated instances, if ever, have such infections been unimpeachably demonstrated by exact or even logical methods.

In over 150 examinations made by a distinguished pathologist, from his personal statement to me, there were only two instances in which he could *infer* the emigration of bacteria from the tonsil to the deeper parts. For one case of endocarditis or articular rheumatism, for instance, observed in connection with an acute lacunar amygdalitis, we see hundreds of the latter without any presumptive sign of general infection. Therefore, the logical conclusion would be that the amygdalitis is conservative and protective, and the expression of a reaction to a localized infection, which occasionally, by reason of its pronounced virulence more than counterbalances the obstruction to systemic absorption offered by the inherent protection of the tonsil, and despite this resistance succeeds in evading its sentry lines and penetrating beyond them, infects some remote organ.

Without going deeper into these questions, which time forbids, I would ask your serious consideration of a few propositions based on, I hope, a not entirely unintelligent observation of many thousand cases of tonsilar hypertrophy and disease.

1. That pure hypertrophy of the faucial tonsil is essentially a phenomenon of early life; that, except in rare instances, it is rather protective than pathological and that even a moderate number of attacks of acute amygdalitis rather substantiate than vitiate the presumption of this protective function.

2. That the cause of this hypertrophy is very often disease of the pharyngeal tonsil, ablation of which will frequently lead to retrogression of its faucial neighbor.

3. That up to the age of puberty, at least, a moderate pure hypertrophy should be respected as an evidence of some important functional activity, probably protective in its nature.

4. That in case this hypertrophy, by reason of its excess and consequent mechanical interference with respiration or audition, demands action, the only justifiable operation is that of amygdalotomy, with preservation of the functionating tissue not in excess, and not of enucleation.

5. That if the disturbances in the tonsilar structure have been, beyond reasonable doubt, the source of neighboring glandular involvements, which in time may menace the general health, the only justiable operation is not amygdalotomy, but complete enucleation.

6. That, after the age of puberty, when the tonsil, like the thymus, perhaps loses its physiological importance and should normally retrogress, pathological conditions in the way of cryptic, parenchymatous, or adjacent inflammations and infections, with their possible remote evil results, should be dealt with as thoroughly and as radically as our surgical resources enable us, the same, however, to be employed with a discrimination, which sees beyond the obvious local phenomena and comprehends their general importance.

170 CLINTON STREET.

A CONTRIBUTION TO THE ÆTIOLOGY OF POLIOMYELITIS.

(*Preliminary Note.*)

By Fr. Proescher, M. D.,
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The infectious nature of poliomyelitis has been demonstrated by different investigators as Flexner and Lewis in the United States, Roemer in Germany, Leiner and Wiesner in Austria, Laudsteiner and Levaditi in Paris. Their experiments have demonstrated the transmission of the disease to apes.

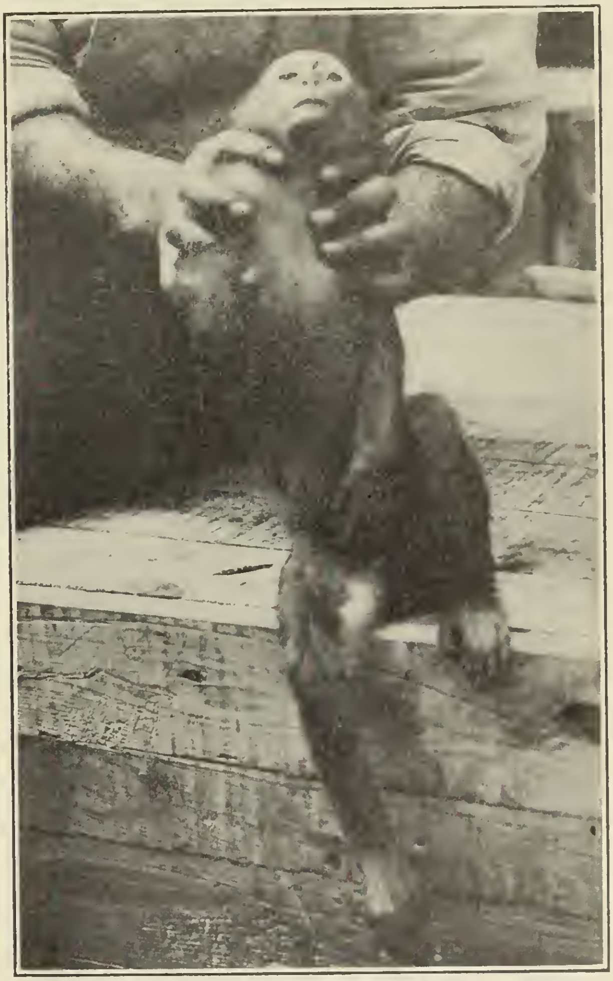


Fig. 1.—Inoculated monkey with flaccid paralysis of left leg.

The specific agent of the disease is at present unknown and, according to the opinion of all competent observers, all hitherto described microorganisms found and interpreted as the cause of poliomyelitis must be attributed to accidental infections. The biological properties of the virus are similar to that of rabies, variola, and chicken pest. It is resistant to glycerin (as shown by Flexner and Roemer) and able to pass through the filter (Flexner and Lewis, Landsteiner and Wiesner). However, this view has not been confirmed by Roemer's experiments of filtration. This apparent disparity in the results obtained may possibly be due to the size of the pores of the filter used in analogy to the virus of rabies which passes through Berkefeld filter No. 5, all other filters excluded. The view, however, that filtrability being an indication of an invisible virus has not yet been supported by experiments. It may be that according to the different stages of development, certain forms pass, while visible forms may be retained. There can scarcely be any doubt that the virus of poliomyelitis does not appertain to the common forms of pathogenic microorganisms.

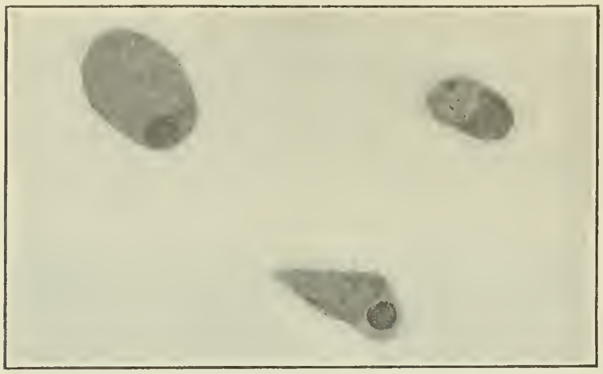


FIG. 2.—Degenerated ganglionic and glia cells of spinal cord of child showing peculiar formations.

In this paper, a peculiar kind of microorganism is described, found in a fatal case of poliomyelitis referred to me by Dr. Marshall, of Aspinwall, and Dr. Theodore Elterich, of Pittsburgh.

At the autopsy performed several hours after death, the usual well known lesions of the spinal cord were found. Microscopically, perivascular infiltrations, hæmorrhages, and degenerations of the ganglionic cells were found throughout the spinal cord.

To confirm the macroscopic and microscopic diagnosis, a monkey (*Maccacus rhesus*) was inoculated on September 26th, with an emulsion made from various parts of the spinal cord and brain: Under ether anæsthesia, 0.5 c.c. (dilution 1 in 10) of the emulsion was injected into the right paracentral convolution, and 10 c.c. of the same emulsion was introduced into the peritoneal cavity. The animal readily recovered from the operation and an hour later appeared in a normal condition. No change occurred during the next six days, but on the seventh day a marked ptosis of the left eye developed so that the lifting up of the eyelid became difficult. The temperature ranged from 103.2° F. (normal temperature) to 105.4° F. In other respects the animal seemed well and had normal appetite. The ptosis lasted for three days, when it disappeared, and was followed on the morning of the twelfth day after inoculation by a complete paralysis of the left leg. (Fig. 1.) The movements of the right leg and both arms were normal and no other clinical signs were noted. Temperature, 102.3° F. Daily examination of the blood showed no marked variation in the absolute number of white cells, except a relative lymphocytosis.

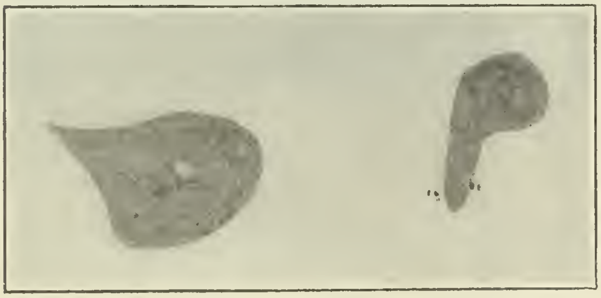


FIG. 3.—Smears of spinal cord of child showing Negrilike bodies.

On the sixteenth day after inoculation the animal was killed by chloroform, and the post mortem showed no macroscopical changes in the brain or spinal cord, except a slight hyperæmia and œdema of the lumbar section. Internal organs were apparently normal.

Various portions of the spinal cord were emulsified and injected into the brain and into the peritoneal cavity of another monkey.

The microscopical examination of the spinal cord and brain of the first monkey gave the same lesions as found in the nervous system of the child.

The spinal cord of the child was subjected to different fixations as ten per cent. formalin, fluochrome, bichromate, osmic, picric, and sulphuric acid, and embedded in both paraffin and celloidin, and sections were stained with different agencies, as iron hæmatoxylin eosin, Van Giesen, Weigert's neuroglia stain, and modified Mann's stain, and with iodine eosin and toluidin blue. Smears were made from the fresh cord, hardened in bichloride alcohol, subjected to the action of dilute lugol solution and of sodium thiosulphate and stained by Mann's method. By the last mentioned methods, peculiar cell inclusions, resembling Negri bodies, and also parasitic formations similar to protozoic bodies were found. In regard to the true nature of parasitic inclusions, no explanation at present seems available.

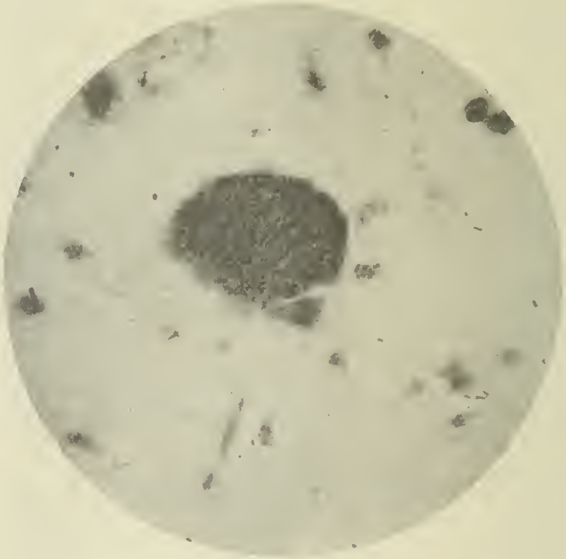


FIG. 4.—Ganglionic cells of spinal cord of monkey showing Negrilike body.

Bonhoff observed similar intranuclear inclusions in glia and ganglionic cells, but by the present investigations we only could observe intraplasmic inclusions.

Smears and sections fixed in formalin and bichloride showed in the protoplasm of the ganglionic cells the presence of round pink bodies without structure, from 3 to 4 μ in diameter and closely resembling Negri bodies. Besides these bodies, there were found deeply, red stained dipplococcuslike granules. (Fig. 3, and Fig. 4.)

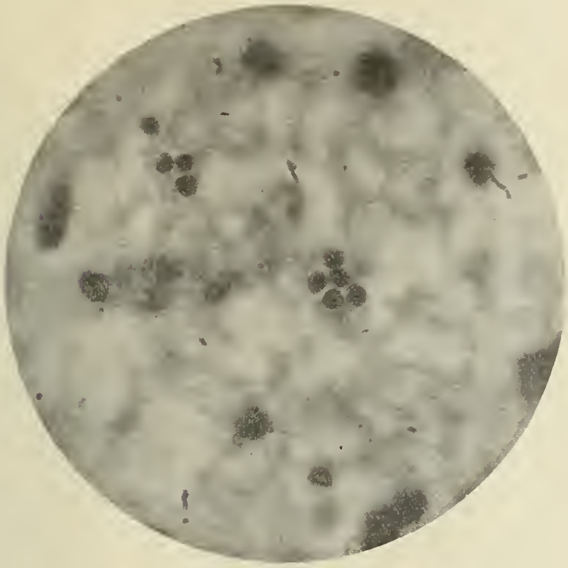


Fig. 5.—Protozoalike bodies in cervical section of spinal cord of child.

Sections hardened with formalin or bichloride, stained with iodine eosin and with toluidin blue, showed vesicularlike formations which consisted of a faintly blue vesicle, containing a nuclear body; also deposits of different shape, stained bluish pink and surrounded by a pale blue protoplasm. The nuclei of these cells, including the deposits, have also changed their staining properties, taking a bluish red or violet color instead of blue. (Fig. 2.)

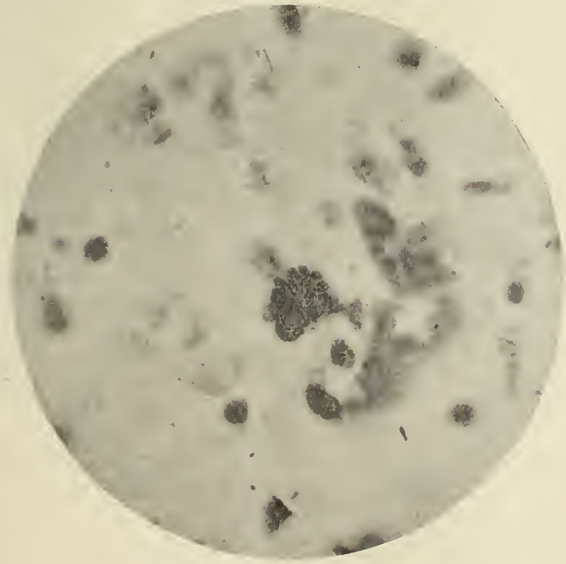


Fig. 6.—Sporulating cyst? Found in cervical section of spinal cord of child.

It seems probable that in this instance we are dealing with ganglionic and glia cells seriously injured by a toxine, which causes degeneration of the protoplasm and the nuclei, thus causing change in the staining properties. Perhaps also an infiltration of the protoplasm by some foreign matter takes place.

It does not seem likely that the peculiar structures mentioned are due to parasites. Further investigation will be necessary to determine whether this alteration of the cell is of diagnostic value.

In addition to this, peculiar formations were noted which are probably of parasitic origin. They do not seem to derivate from the central nervous system or to be a product of cellular degeneration. These appeared in groups of three and four, round, distinctly outlined, extracellular bodies about 2 or 3 μ in diameter, inclosing azure blue stained nuclear bodies, surrounded by a bright grass green halo. (Fig 5.)

Further a round cyst was noted about 10 μ in diameter, which appeared surrounded by a small colorless capsule. In its centre it contained about thirteen more or less round bodies (simulating a sporolating malaria parasite) and offering a striking resemblance to the above described extracellular bodies. (Fig. 6.) The results of the present investigations would suggest that these findings are neither to be considered as products of degenerated nerve cells or of degenerated leucocytes, nor being of perivascular origin.

Whether these bodies are to be interpreted as protozoalike organisms or as some other unknown microorganism, we are at present unable to say.

Further investigations by experiments on monkeys and by post mortem examination of human beings have to decide the constancy of the related findings.

EPIDEMIC POLIOMYELITIS.

By W. Sohier Bryant, A. M., M. D.,
New York.

I.

Epidemic poliomyelitis, or infantile paralysis, seems to have attained to unusual prominence at the present time. This notoriety is not, of course, to be attributed to the phenomenal spread or to the unprecedented virulence of the disease, but to the fact that, although the organism of epidemic poliomyelitis remains as yet undiscovered, the medical profession is beginning to recognize more clearly the symptoms of the malady. It was Dr. Simon Flexner who first proved by inoculation experiments that infantile paralysis originates through infection. Of late the infectious nature of this destructive disease is increasingly emphasized throughout the profession.

During the past eighteen months the writer has been able to make careful clinical observations of the course of epidemic poliomyelitis, and his conclusions, based upon this clinical experience, accord with the published experimental findings as to the infectious nature of infantile paralysis. The writer's observations lead him to the belief that the disease is infectious; furthermore, that it is contagious, and that the contagion emanates from the nasopharyngeal secretions.

With regard to its inception and development, poliomyelitis is analogous to cerebrospinal meningitis, a malady which has until recently occupied a professional position exactly similar to that which poliomyelitis holds at the present time. A brief statement showing this analogy may be of help in a study of the disease under discussion. In 1898, while the writer was acting chief surgeon of the Seventh Army Corps at Savannah, an epidemic of cerebrospinal meningitis broke out among the United States troops locatel in that city. Two things are particularly noteworthy with reference to this epidemic cerebrospinal meningitis: *First,* the disease always began with nasopharyngitis; and *secondly,* it spread chiefly among associated soldiers. It was also noted that the meningeal infection was transmitted by individuals who showed none but the nasopharyngeal symptoms and who in the majority of cases themselves developed no intracranial or other complications. These cases of simple pharyngitis seemed to be as infectious and quite as capable of producing cerebrospinal meningitis as were the cases that showed true meningeal symptoms. For both the pharyngeal and the meningopharyngeal cases the same local treatment was used. It consisted of mild nasal antiseptics. A rapid subsidence of the nasopharyngitis and the apparent prevention of meningeal symptoms were the results of this treatment. Even in cases where the meningeal symptoms had already developed, it was possible to ameliorate these symptoms by means of the treatment. The constitutional symptoms—temperature, etc.—improved in the course of three or four days.

The course of epidemic poliomyelitis as personally observed by the writer during the past year and a half resembles exactly the course of the epidemic cerebrospinal meningitis that occurred in 1898 at Savannah. It was found that children who associated with persons suffering from epidemic poliomyelitis were more likely to contract this disease than were children who were more remote. The number of cases of nasopharyngitis was extremely large in communities where epidemic poliomyelitis existed, and the number of cases of pharyngitis fluctuated in accordance with the existing number of cases of epidemic poliomyelitis. Analogous with his experience at Savannah, the writer found that in the major portion of these simple nasopharyngeal cases poliomyelitic symptoms did not develop.

In view of these facts it seems probable that infantile paralysis has the same portal of infection as have epidemic cerebrospinal meningitis and other better understood diseases which enter by means of the nasopharynx, as for instance lobar pneumonia and true influenza. Diphtheria also has a nasopharyngeal port of entry and shows nasopharyngeal symptoms prior to the appearance of the more remote symptoms. Diphtheria and influenza are especially interesting in this connection, because of their nerve complications: they may cause paralysis of nerves located at a distance from the primary seat of infection, just as epidemic poliomyelitis causes nerve lesions at a distance from the port of entry. There is, therefore, another close resemblance in the natural history of these diseases.

The writer's conclusions concerning poliomyelitis are, therefore, based upon the following observations: The prodromal nasopharyngitis, the numerous abortive cases with nasopharyngeal symptoms alone, and the spread of the disease by association with either simple nasopharyngitis or complicated paralytic cases. He is driven to the conclusion that in epidemic poliomyelitis, as in cerebrospinal meningitis, lobar pneumonia, true influenza, and diphtheria, the symptoms remote from the nasopharyngitis are not really pathological entities of the disease itself. They are to be considered in the light of complications.

II.

If we admit that epidemic poliomyelitis is an infectious. contagious disease entering the system by means of the nasopharynx, the first step to be taken in its treatment is quarantine of the patient. This isolation should continue during the whole of the nasopharyngeal or active stage. The general treatment at this period of the disease is much the same as that given for other diseases of the upper air tract. It consists of symptomatic treatment, rest in bed, and restricted diet with a maximum amount of potable water.

The infection should be controlled assiduously at the port of entry. The agencies for this local control are also the same as those used in the more common diseases of the nasopharynx. The writer has found that mild antiseptic applications, colloidal silver; argyrol, twenty-five per cent.; protargol, thirty per cent.; and chinosol 1 in 2,000, applied with a post nasal spray, are most efficacious in the treatment of poliomyelitis.

Judging from our experience with other diseases of nasopharyngeal origin, we feel sure that poliomyelitic infection is less likely to acquire a foothold where the nasopharynx is in a resistant condition, and that the infection by this route, when it does occur, is generally reduced by reason of such a defensive condition. The writer believes that where chronic infection is present in the nasopharynx, as for instance in cases of diseased adenoids, postnasal catarrhs, severer infections of the nasopharynx are much more likely to occur than would be the case where no such predisposing factors existed.

The effects of this general and local treatment of infantile paralysis have been as follows: *First,* the pharyngeal infection has been restricted; *second,* the febrile conditions have receded rapidly, the normal temperature being reached in three or four days; *third,* paretic symptoms have apparently been prevented.

In times of cerebrospinal or poliomyelitic epidemic the significance of nasopharyngitis is, therefore, enormously enhanced. This condition suddenly becomes most important, since it may be the first symptom of a very dangerous disease. Hence all cases of nasopharyngitis occurring at such times should be most carefully watched and their treatment undertaken without delay.

In view of this infectious, contagious element of the affection, the importance of including infantile paralysis among those diseases for which children are excluded from school can hardly be overestimated.

To sum up: Epidemic poliomyelitis is a contagious and infectious disease. It enters the system by means of the nasopharynx. The disease proper, in contradistinction to the sequelæ, is amenable to local pharyngeal treatment. Prophylaxis is attained by nasopharyngeal hygiene. In times of epidemic poliomyelitis all cases of nasopharyngitis should be regarded with suspicion; they should be treated promptly.

41 East Thirty-third Street.

REPORT OF A CASE OF CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.*

By Rose Harrison, M. D.,
Philadelphia.

Although many cases of this condition have been reported in medical annals, still there remains much discussion in regard to the pathogenesis and treatment. Before entering upon a discussion of this interesting subject it might be well to cite a few instances of recorded cases.

The first reported case of obstruction at the pylorus occurring in infancy was reported by Beardsley (1) in 1788. In 1841 Williamson (2) reported the second case, while Dawoski in 1842 reported the third case in the *Archives générales de médecine* (3). In both these cases the children died when five weeks old. From the time of the case of Dawoski to that of Hirschsprung, of Copenhagen, in 1888, a period of forty-six years, medical annals contain no clinical instances of infantile pyloric stenosis. Since Hirschsprung there have been reports of cases by De Bruin-Kop, Ashby, Gran, Still, and many others.

Scudder and Quimby (4) in an extensive paper record 115 cases which have been reported in medical literature up to January, 1905. Of this number the medical diagnosis was subsequently confirmed by autopsy in some fifty-five cases. In sixty of the cases an operation was performed for the relief of the condition.

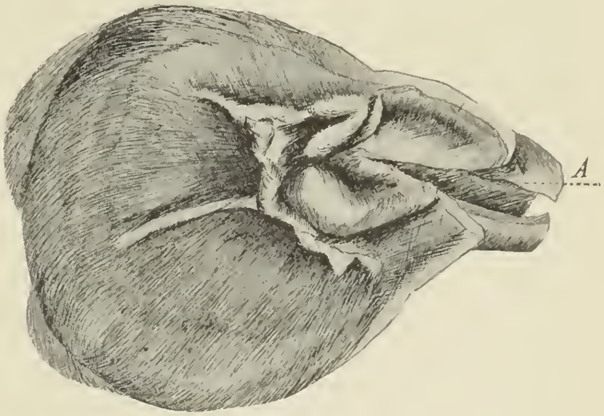
With the paper of Hirschsprung in 1888 begins our modern conception of the subject. Therefore experience with pyloric stenosis in infancy only covers a period of seventeen years. The disease, however, is not so uncommon as one might expect and many of the diagnoses of intestinal obstruction, marasmus, and vomiting have, in truth, been pyloric stenosis.

The ætiology of pyloric stenosis (congenital) seems to remain on a theoretical basis. There are three theories given which need mention: 1. Nicoll says the hypertrophy of the pylorus is a primary congenital overgrowth of the sphincter muscle. 2. Thomson believes the hypertrophy to be secondary to an incoordinated action of the stomach muscles dependent on functional disorders of the gastric nervous system, resulting in gastric spasm. 3. According to Pfaundler the hypertrophy is due to a spasmodic contraction from gastric irritation after birth. There are many facts supporting these views, all agreeing, however, that there is a hyperplasia of the circular pyloric fibres.

The condition seems to be more common among males than females. Of sixty-eight cases mentioned by Holt eighty-one per cent. were males and nineteen per cent. were females.

There are two types of pyloric stenosis; namely, hypertrophic and spasmodic. The hypertrophic type is that in which the essential structural changes of the stomach consist in true hypertrophy of the musculature of the pylorus, stomach, and sometimes also of the œsophagus. The transverse muscular fibres show an abnormal development which is a congenital condition. The spasmodic type is that form in which there is a contraction of these increased fibres. According to Hammer there is also a congenital atresia of the pylorus in which there is no thickening.

Either one or both of these types may exist. In some cases the hypertrophic type predominates while in others the spasmodic type may be prominent. In the fifty-five autopsy records of Scudder and Quimby a pyloric tumor was found unassociated with adhesions of any kind. It was very hard and firm, variable in size, and resembled a hazel nut or a walnut. Upon microscopical examination the tumor in every instance was due chiefly to a hyperplasia of the circular muscular fibres. Only once were the longitudinal muscular fibres found increased in size. It is thought that the muscular hypertrophy may be primary—a local overgrowth or secondary due to disturbances elsewhere.



Congenital hypertrophic stenosis of the pylorus.

The possibility of pyloric stenosis occurring in the fœtus remains a mooted question. J. W. Ballantyne, quoted by Robson and Moynihan, says that he has never observed pyloric hypertrophy in the fœtus, while Henschel has reported three cases which occurred in the same family, an occurrence which suggests the probability of some congenital distrophy.

The symptoms of stenosis of the pylorus vary with the amount of stenosis present and they may appear in the first few days of life. It is, however, more common for a period of comparative or absolute good health with gain in weight and good digestion to continue for several days or even weeks before symptoms appear. According to Koplik the children are born perfectly well and the majority (fully two thirds) are breast fed. This, however, may only be apparent inasmuch as this condition of pyloric stenosis is more likely to be thought of in breast fed infants when the initial symptom appears. In case of artificially fed children the initial symptom is naturally and usually attributed to incorrect feeding. The initial symptom is vomiting which may begin in from one to four days, although in some cases it may not appear until after the seventh day. In the majority of cases the symptoms become manifest during the third week of life while in exceptional cases it may not appear until the eighth week. It is projectile in character and is not influenced by the quantity of food taken. It may occur first at intervals throughout the twenty-four hours, and soon becomes persistent, the child rejecting sometimes a portion or all of every nursing. The intervals are long at first and gradually become less until the vomiting occurs, from a few minutes to several hours after taking food. With the vomiting there comes a steady emaciation or a stationary weight. Other signs of constitutional disturbances appear. The vomitus may be liquid or curdled milk and may contain bile as was noted in the cases of Saunders (5) and Schwyzer (6). Blood has never been vomited in any recorded case. The presence of hydrochloric acid in the vomitus is very variable. It may be absent, increased, or diminished. Lactic acid is usually absent and not infrequently there is little evidence of a catarrhal gastritis. The child is ravenous and very hungry and is only pacified temporarily by food, only to show signs of distress when the contractions of the stomach empty their contents after feeding. In some cases almost all the food taken is ejected, while in others only a portion of it. The next symptom is a marked and progressive loss of weight, and because of starvation the child shows all the evidences of malnutrition. Constipation as a rule is present, but occasionally diarrhœa is seen. The urine is scanty, of high specific gravity, and contains an excessive amount of urates. Fever is never present, the temperature usually being normal or subnormal.

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*Read before the Philadelphia Pædiatric Society, October 11, 1910.

I will not attempt in this paper to differentiate in detail pyloric stenosis from the many other conditions with which it may be confounded. Before passing on, however, the following conditions may be mentioned: Narrowing of the duodenum, toxic vomiting, and narrowing of the œsophagus.

The diagnosis of pyloric stenosis depends on the age of the patient, the history of the case, time of onset, time and character of the vomiting, and progressive emaciation.

In the majority of cases the prognosis is grave, although this fact is disputed. Hübner says the majority of the cases offer in spite of the seriousness of the illness a good prognosis even under expectant treatment. The longer the period between birth and the first appearance of the disease the better the prognosis. Cautley, on the other hand, states that where the diagnosis is positive operative measures must be resorted to. Recoveries without operation have, however, been reported by Ibrahim and others even after all the typical symptoms were present, and many hold that an operation is contraindicated on account of its great dangers. The mortality from operative procedure is estimated to be about eighty per cent.

In the treatment of this interesting condition the importance of breast feeding can hardly be overestimated. If this is not available and artificial methods of feeding have been instituted then all dietetic errors must be corrected. Lavage should be practised where possible. Enemata in the form of enteroclysis of small amounts of normal saline solution should be given regularly to furnish the fluid required by the body and occasionally to cleanse the intestine. In regard to drugs—Hübner advises opiates and other derivates of opium in very small amounts to quiet the spasm of the pylorus and adjacent stomach walls.

After a positive diagnosis has been made and all medicinal treatment fails the question of surgical interference should be considered. The following table will show the results of sixty operations performed by Scudder and Quimby. Their results were certainly encouraging, the general mortality being 46.5 per cent.

	No.	Recovered.	Died.	Per cent. of mortality.
Gastroenterostomies	40	21	19	47·7
Loreta's operation (divulsions of the pylorus).....	11	7	4	36.3
Pyloroplasties	8	4	4	50.0
Pylorectomies	1	0	1	100
Total	60	32	28	46.5

The following illustrates a case of congenital hypertrophic stenosis of the pylorus which I attended and which I am greatly indebted to for the autopsy and valuable suggestions to Dr. W. N. Bradley and Dr. A. K. Sallom:

Case. On July 29, 1910, I was called to see H. W., male infant, white, four weeks old, with the following history: Second child, born two weeks over time, weight at birth about eight pounds.

Family history:—Father apparently well, mother highly neurotic and delicate. Maternal grandmother died of pneumonia, maternal grandfather of pulmonary tuberculosis. History of paternal grandparents negative.

Previous history:—According to the nurse who was present at the time of delivery the infant showed all signs of health. Breast feeding was not carried out from the beginning on account of the scant supply of mother's milk and her general neurotic condition.

The physician who attended the child at birth placed it on condensed milk diluted with twelve parts of water—two ounces being given every two hours. The child got along well for the first two weeks, but toward the end of the second week it started to vomit its feedings once a day, this kept up becoming more frequent until it vomited every feeding. When I was called to see the child at the beginning of the fourth week I found it very weak, emaciated, prostrated, and vomiting after each feeding. Bowels were constipated, urine scanty and high colored, temperature normal. On examination I found the subject to be well formed, tongue clean. Examinations of heart and lungs negative. The abdomen after feeding was distended over the area occupied by the stomach. At this place a distinct tumor could then be noted which disappeared after vomiting. The distended stomach could be clearly marked out as it contracted in order to force the contents onward. At times a distinct hourglass constriction was clearly seen. Peristalsis was marked and passed from left to right across the epigastrium only a short distance beyond the median line. The peristaltic waves were especially present after food was taken. No palpable tumor could be felt in the region of the pylorus until after death. The mother would not consent to an operation.

The following treatment was given: When called to see the child—all milk was stopped and the child placed successively on barley water, albumen water, whey, and peptonized milk. The child was started with a course of calomel. It was successively placed upon bismuth subnitrate, dilute hydrocyanic acid, etc., without much success. Brandy as well as inunctions of cod liver oil were given to the child in order to keep up its strength. Rectal feediny was also resorted to but very little good resulted therefrom.

The baby grew progressively worse, and on August 9th, eleven days after I saw it, death occurred.

A post mortem examination performed on the stomach showed the following points:

The stomach was very much dilated and the pylorus very much constricted, the mucous membrane being thrown into folds as will be seen in the accompanying illustration. The pyloric lumen was so narrow that only a small sized steel probe could be admitted. A hard, fibrous, movable tumor in the region of the pylorus was found about the size of a hazel nut. There was marked hypertrophy of the mucous membrane and of the muscular coats of the pylorus, thus causing a narrowing of the orifice. The intestines were collapsed.

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1836 SOUTH BROAD STREET.

A CASE OF MIXED CELL SARCOMA OF THE PITUITARY BODY, WITH REPORT OF THE AUTOPSY FINDINGS.

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Tumors of the pituitary body are of rather rare occurrence, although the number of cases reported in literature within the past few years is quite a large one, especially since attention has been called to the interesting disturbances which accompany them. The report of the following case is justified, for aside from its unusually rapid clinical course, the pathological and histological findings are of an exceptional nature.

CASE 18500. A. T.; female, colored, age forty. Admitted May 6, 1910; born in D. C.; could not read nor write; had smallpox at the age of fourteen; married when she was fifteen years of age; husband died fifteen years later; had two children as result of this union; a boy died at the age of five years, cause of death unknown; one daughter living and in good health who has a syphilitic child, ten years of age. No history of miscarriages. Patient remarried four years ago. Her husband has been in the penitentiary for the past six months serving a sentence of four years. She always enjoyed excellent health and earned her living as a cook. She was head cook at a hotel for colored people, where she received $10 a week. She was employed there until about April 1, 1910, and was considered a very efficient employee. She occasionally suffered from sick headaches, which were more pronounced in the morning after rising; however, she never lost any time from this complaint.

From the information received it seems probable that the beginning of her trouble dated back several months, although the date is questionable. The earliest symptoms recorded appeared two months prior to admission. About March 1st she complained of severe frontal headaches, polydipsia, and occasional attacks of vomiting. She stopped work about April 1st and remained at home for medical treatment. During this month she had unquenchable thirst, loss of appetite, but seldom vomited. Mental dulness and apathy became manifest. Gradually consciousness became clouded; had hallucinations of sight. Memory failed the last two weeks she was at home, and she passed into a confused state, was restless, and talked incoherently. At no time did she complain of impairment of vision.

The patient was taken to the Washington Asylum Hospital and remained there eleven days, when she was brought here. The medical certificate stated that "she had acted very peculiarly since admitted, walking up and down the ward night and day, pulling the clothes off the other patients' beds. When questioned she would answer foreign to what was asked her; said she saw the devil when she was down town, said he was very ugly and he made daggers toward her; the devil told her she was to be his angel; said different people had tried to harm her.

Physical examination: A large, light brown colored woman; weight, 150 pounds; height, five feet six inches; expression rather peculiar; skin over the face and neck was disfigured with pock marks, and had a pasty, waxy appearance; more myxœdematous than acromegalic in character. Head was not unusually large; was African in type; lips were not thicker than in the average negro; there was an elongation of the lower jaw, a suggestion of prognathism as the accompanying picture (see Fig. 1) which was taken two days after admission will show. The prognathism was without doubt due to racial characteristics rather than to a manifestation of disease, as the downward length of the jaw was not increased and the enlargement was more racial than acromegalic in nature. The tongue was not hypertrophied, nor was there any increase in size of interdental spaces; no enlargement of the long bones nor of the sternum; no kyphosis. Glandular system normal. There were no signs to indicate acromegalic disturbance. Froehlich (5) type was not apparent, as there were no abnormal fatty deposits on any part of the body. Examination of the viscera showed nothing abnormal.

Uranalysis: Specific gravity, 1.010, reaction acid, no sugar or albumin. Two days before death the analysis showed; specific gravity, 1.012, acid reaction, albumin, hyaline, and granular casts.

Examination of the blood serum showed a double positive reaction to the Wassermann test. This was suggestive of a luetic condition and antisyphilitic treatment was used.

Nervous system: No pareses; gait steady but movements slow; deep reflexes exaggerated. Eyes, pupils equal and responded to light and accommodation; sight apparently not impaired. Involuntary evacuations.

Mental examination: Mentally patient showed dulness, disorientation, memory confused and uncertain. Gave her name, occupation, and place of birth correctly; further than this no information was given. She answered with sufficient precision but her replies were incoherent. Frequently complained of pain, but no information could be gained as to its locality. Occasionally said her throat was sore; refused solid food; took liquid diet but sometimes refused this. She was restless, movements performed slowly were aimless and purposeless; at times patient showed irritability of temper and resistiveness.

The following abstract was taken from the ward notes: During the first ten days she was treated in bed; temperature was subnormal five days, varying from 97° to 97.5° F.; pulse, 76 to 80; respiration, 20 to 24; patient refused food; was tube fed, vomited; stomach irrigated; again fed; retained nourishment. The following five days the records showed that she was up and dressed; temperature normal; restless, and mentally confused; refused nourishment and was again tube fed; following this feeding she vomited; stomach washed out and food again introduced into the stomach, which she retained. The next five days she appeared brighter mentally and stronger physically. She would sit down for hours at a time, slept well at night and was easily cared for. For the next five days her condition was unchanged; still refused solid food; took liquid diet sometimes after much coaxing.

On June 1st, twenty-four days after admission, she appeared unusually dull; was placed in bed; would not take her food and was artificially fed; vomited; after this patient took her food voluntarily. On June 4th she passed into a somnolent state; was again artificially fed; vomited; stomach irrigated, and she retained nourishment. She remained in a state of stupor from which she could not be aroused until June 7th, when she died rather suddenly in a convulsion. Her temperature was subnormal four days preceding her death. Pulse rate varied from 76 to 90; respiration, 22 to 24.

Post mortem and histological examination by Dr. Blackburn and Dr. Lafora. Autopsy record No. 2678.

The body was that of a large, well developed colored woman; face pock marked; blood exuding from the mouth.

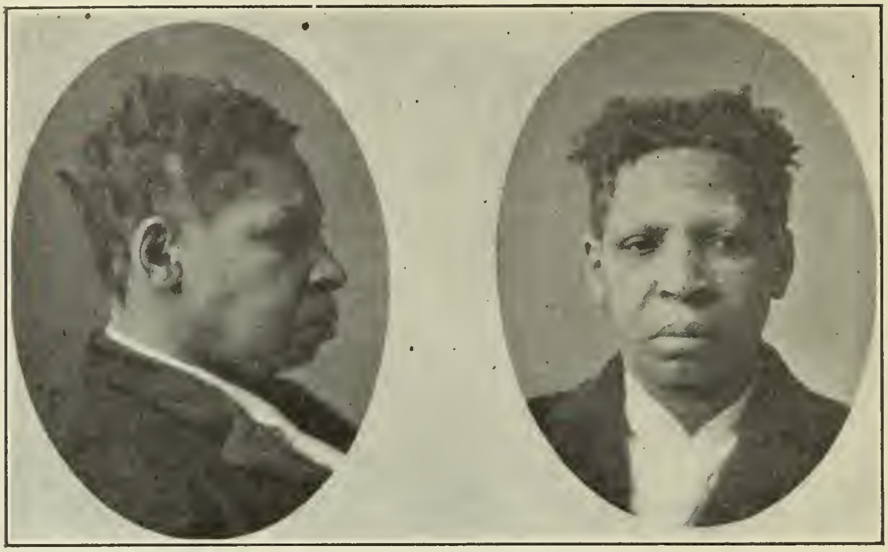

Fig. 1.—Picture of patient.

Features rather coarse but not strikingly so; lips thick; some prognathism of face though not to a noticeable degree for a colored person. There were no other deformities nor peculiarities noted.

Cranium: Scalp showed extravasation of blood upon section. Skull cap symmetrical; moderately thin for a colored person, and showed no deformity. Dura mater nonadherent to bone and otherwise normal; no appreciable intracranial tension.

Brain: Weight, 1,140 grammes. Pia showed some œdema; moderate engorgement of the veins; very slight arteriosclerosis of the basal vessels; small white calcified plaque on pia of right temporal region. At the base was found a large soft tumor arising from the hypophysis or near it, and thrusting itself upward into the third ventricle and displacing its walls. On the surface the structures displaced and occupied by the tumor were the corpora mamillaria, the infundibulum, and the floor of the third ventricle; and the crura, the upper end of the pons and the optic tract and chiasma were displaced but not materially injured. The growth (see Fig. 2) when seen on median section of the brain, extended from the chiasma to the pons, and laterally from one displaced optic tract to the other, about two and a half centimetres, while within the brain it extended from the entrance to the aqueduct of Sylvius to about the region of the rostrum callosi, say about three centimetres in anteroposterior diameter. It extended upward and into the brain to a little above the line of the anterior white commissure. The diameters of the tumor were, therefore, about three centimetres anteroposteriorly and two and a half vertically. Within the brain the exact boundaries of the tumor were uncertain as the growth had slightly infiltrated the adjoining tissues. As to the exact origin of the growth it was hard to say, as from its situation it was evidently a pituitary growth, but the sella turcica was only moderately enlarged and the clinoid processes of the right side were partially destroyed, but it did not appear to be a simple enlargement of the hypophysis. The gland, or portion within the hypophyseal fossa, was, however, continuous with the tumor and to the naked eye resembled it in structure. The growth was of extremely soft, almost gelatinous tissue, richly vascular, the vessels having a radical direction from the apparent origin of the growth. In the fourth ventricle there were evidently metastatic extensions of the tumor apparently confined to the surface, and so far as dissected, the adjoining tissues seemed to be infiltrated. From the situation of the growth, its evident infiltrating character, and from the naked eye appearance of the tumor, it was provisionally named an adenomyxosarcoma of the pituitary body.

Thyreoid gland: Nothing remarkable in size or structure.

Lungs: Right weighed 530 grammes; left, 440 grammes. They showed slight hypostasis posteriorly, and emphysema anteriorly.

Heart: Weight, 380 grammes; the tricuspid valve admitted three fingers; pulmonary valves normal; mitral admitted barely two fingers; there was a slight thickening of the edges. The aortic valve was thickened, with adhesion of aortic segments. Cardiac muscle normal.

Kidneys: Weight of right, 140 grammes; left, 150 grammes. Surfaces smooth, the organs congested. The left kidney showed a small, hard, fibrous node near the surface. The condition in general indicated a slight parenchymatous change.

Spleen: Weight, 100 grammes; capsule smooth and a little thickened. Pulp firm and fibrous.

Liver: Weight, 1,430 grammes; capsule smooth; tissue appeared normal. Gallbladder contained 20 c.c. of thick bile.

Uterus: Showed a polypus present; ovaries hard and sclerotic.

Abdominal aorta at the bifurcation showed slight atheroma.

Microscopical examination: The microscopical study of the tumor revealed in general the structure of mixed celled sarcoma, with in some places a myxomatous character of some of the cells. The cells varied extremely in size and shape and some large elements contained several nuclei. Karyokinetic changes were found in many cells. The intercellular substance was relatively abundant, sometimes faintly fibrillated and in other places granular. Around the periphery of the growth a great proliferation of thin walled blood vessels was seen. At the line of junction of the tumor with the nervous structure the boundaries were ill defined on account of cellular infiltration of the tissue. The small portion of the growth found in the sella turcica showed the same general structure of the tumor with the remains of the hypophysis lying compressed at the bottom. The growth appeared to have originated above the pituitary body and so far as could be determined no part of the gland was directly included in the tumor mass. The fourth ventricle showed a surface metastasis, and an inclusion of the choroid plexus. The conclusion reached was that the tumor was a sarcoma of the pituitary region, with myxomatous or hydropic degeneration of some of the cells, but that it was not a true adenoma nor hyperplasia of the hypophysis. The exact histogenesis of the tumor was hard to determine, but the fact that it did not

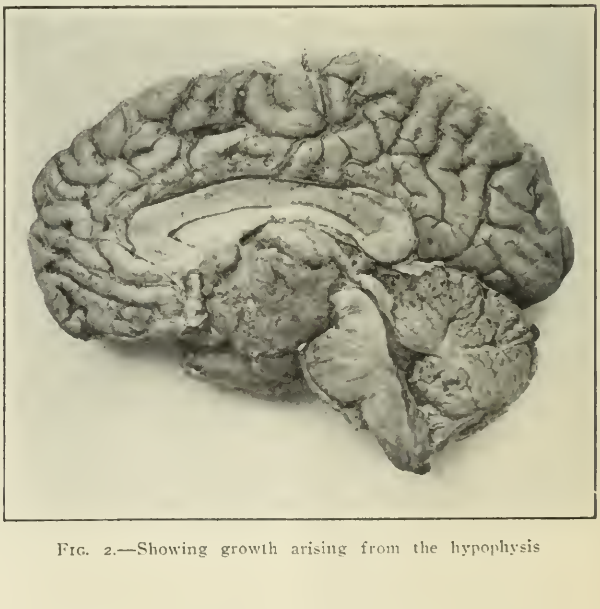

Fig. 2.—Showing growth arising from the hypophysis

contain hyperplastic adenoid tissue might be taken as explanatory of some of the absent symptoms. At the junction of the compressed portion of the gland within the sella turcica certain ill defined groups of cells suggested an incorporation of some of the gland cell masses but as differential staining did not determine the exact nature of these cells it must remain uncertain. It was not unreasonable to conclude that in the sarcomatous development of the connective tissue, some of the gland elements were included, but the growth was unquestionably a sarcoma of somewhat peculiar type perhaps best designated as a mixed celled sarcoma, and the place of development was perhaps from the capsule or the connective tissue of the gland superiorly.

Microscopical examination of the brain tissue revealed no indication of specific disease.

In the absence of any data dealing with the present illness and onset of the disease, as the personal history of the patient was not obtained until after her death, a clinical diagnosis of cerebral tumor was not made. The only symptoms manifested during the month she was under our care were mental confusion with the appearance later of stupor; occasional attacks of vomiting, which, with one exception, followed tube feeding and appeared to be due to irritation from this procedure. The double positive reaction of the blood serum to the Wassermann test, the great prevalence of syphilis in the negro race, together with the stated symptoms, led us to make a provisional diagnosis of luetic disease of the brain.

From the size and location of the growth, we would have expected more of the cardinal symptoms of cerebral tumor to have appeared earlier than two months before death, and it is remarkable that, in this patient, in spite of the extraordinary pathologicoanatomical changes at the base of the brain, the clinical disturbances should have been so comparatively slight, which makes it surprising that she lived as long as she did. The condition found in this case is another proof of how much change the brain substance can withstand and yet adapt itself to changed space relations. However, the clinical course of these cases have a fairly wide limit, some cases run a course of six or seven years, while others have been very rapid. Bergman and Steinhaus (9) report a case in which the patient showed clinical symptoms only four weeks before entering the hospital, and like this case, the course was short and acute.

Had this case come under our observation earlier, or had we been able to learn something of the history of the onset of the disease, it is possible an operation, though difficult in this situation, might have resulted in a temporary relief at least; but from the character of the growth histologically and the metastatic processes found in the neighboring tissues, there would have been undoubtedly a recurrence of the conditions sooner or later.

Bartels (2) emphasizes the fact that the action of the pulse in hypophyseal tumors deviates from that observed in other cerebral tumors, namely, that it is constantly quickened, and according to De Cyon (4), the use of this gland in animals has an influence to quicken the pulse rate; but nothing was noted characteristically abnormal in this regard in our patient. The pulse rate varied from 74 to 80 during the first three weeks of her illness, and during the period of four days before her death, did not change materially, being only 90 one hour before her death.

The temperature was 97° F. for one week following admission, and then was 98.4° F. for a few days. No note was made of this again until one week before her death; it then continued 97° F. thereafter. Bartels (2), Agotte (1), and Rath (8), state that a subnormal temperature is always present in tumors of the hypophysis. The polydipsia which occurs in basilar tumors was present for more than a month before she entered the hospital, but was not in evidence subsequently, owing to her mental dulness.

The metastases found in the floor of the fourth ventricle did not materially influence the respiration rate throughout the disease, as it varied from twenty in the early period to twenty-four before death.

Of general brain symptoms, the patient showed at first headache confined to the frontal region—the time, onset, or character of these is indeterminate, we only know from her relatives that she occasionally mentioned the presence of pain—this commonly occurs in this disease. Rath (8) found it in 81.6 per cent. of his cases; Bernhardt (3), in eighty per cent. of hypophyseal tumors. Vomiting was not a prominent symptom at any time.

The eye findings are conspicuous because of their negative character. The pupils were equal and normal in size. There was a prompt reaction to all tests. There were no indications for an opthalmoscopic examination; however, this would have been impossible, owing to the restlessness and inability to cooperate on the part of the patient. It is quite apparent there was no impairment of sight, as there had been no history of defect of sight and patient did not wear glasses; at no time did she complain of any visual defect. The absence of these symptoms may be explained by the lack of intracranial pressure and injury to the path of vision, the predominating direction of the growth being upward into the ventricular cavity. It is rare to find an entirely normal pupil in brain tumors, but Schönborn (10), Steinhaus, Bergman (9), Yamaguchi (12), and others have mentioned this in their cases.

There was no history of convulsions throughout the course of the disease, but the patient died in a convulsion of a mild type, with bleeding from nose and mouth. The temporary convulsions observed in brain tumor are due to intracranial pressure, but this pressure was not present in this case, as shown by autopsy.

The psychic behavior of this patient was peculiar. There was great deterioration of the intellect. The facial expression was demented, she gradually became somnolent, later passed into a deep stupor from which she could not be aroused. Hyashi (6) explains the developing of the psychic disturbance by the pressure on the neighboring frontal lobes.

Of special interest, for some time, have been the symptoms of acromegalia and other growth disturbances that are so often observed with tumors of the hypophysis, but to which attention has only been directed within the last few years, i. e., giant growth, dwarf growth, adipositas universalis, etc. Uthoff (11) is inclined to place these general trophic disturbances in direct relation to the hypophyseal disease. Such symptoms did not occur in this case, their absence being explained by the fact that the anterior lobe of the gland was not involved.

It is possible that the tumor may have originated in the pars intermedia, as described by Lewis (7) in a recent article; such growths being distinguished by a like absence of characteristic symptoms and by similar histological structure.

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FROEHLICH'S SYNDROME IN CASES OF PITUITARY TUMOR.

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I wish to present a remarkable case and to discuss its significance in connection with the physiology of the pituitary gland.

Case. The patient, a bookkeeper, sixty-four years of age, was brought to the hospital moribund; no history could be obtained at the time; he died almost at once. In the ante mortem clinical note the patient was described as very fat, with a nearly female swelling form and a striking absence of hair growth.

At a subsequent interview with a relative it was found that he had been corpulent all his life. He had been married about twenty years, and had had no children. He had been impotent, and his marital relations had not been very happy. He had not used alcohol to excess. His eyesight had been bad, especially that of the right eye, and he had worn glasses. Further details could not be obtained. Recently he had had repeated attacks of dyspnœa, and it was in such an attack that he was brought to the hospital and died.

Post mortem examination, No. 588, June 21, 1909, by Dr. Ottenberg. The body of a large, very fat man, about sixty years of age. Length of body, 158 cm. Weight, 270 lbs.

Hair on head, axillæ, and pubes very thin. Only a few scattered hairs on the face.

Skin, of entire body congested. Head and chest deeply cyanotic. Œdema of the right leg.

Neck organs, trachea deeply congested. Thyreoid very large; left lobe, weight 100 grammes; right lobe, fifty grammes. Cut surface showed abundance of colloid. Only the left upper parathyreoid was found.

Extremities. There was a deep red and orange yellow thrombus adherent in the right popliteal vein.

Heart very large and flabby. Right ventricle markedly dilated; wall, thin; muscle, soft, yellowish, more than half of its thickness consisted of fat. Left ventricle dilated; muscle, flabby, streaked with yellow. Valves not abnormal. Coronary arteries showed numerous atheromatous plaques and a few areas of calcification.

Lungs contained air throughout. At the right hilus were subpleural and interstitial hæmorrhages. Almost all the arteries of both lungs were filled with firm, yellow and dark red, partly adherent thrombi. The artery walls showed fatty atheromatous plaques.

Omentum and mesentery remarkably large and fatty.

Stomach, mucous membrane thin, green.

Ileum, congested; follicles, hypertrophied.

Colon. In the hepatic flexure was a flat, firm, circular tumor about 5 cm. in diameter, occupying the wall of the colon for about half of its circumference. The inner surface of the tumor was ulcerated. On the outer aspect it had infiltrated the fat of the adjacent omentum for a short distance. On cross section, total infiltration of the intestinal wall. No enlarged glands or metastases were found anywhere. Scattered through the colon were numerous small, saccular diverticula, about 1 cm. in depth.

Rectum. The upper part of the rectum for about four inches was imbedded in dense connective tissue which contained numerous abscesses. The mucous membrane was normal.

The spleen was very large and hard. Weight, 400 grammes.

Liver congested. Centres of lobules deep red, peripheries, light yellow, standing out sharply (fatty nutmeg liver).

Gallbladder contained one large and many small cholesterin stones.

Adrenals enlarged. Right adrenal weighed 10.35 grammes; left, 13.62 grammes. Otherwise appearance not abnormal.

Kidneys, weighed each 200 grammes; consistence soft. Capsule, easily stripped. Surface, uneven, showed many small and large serous cysts. Section; cortex not markedly narrow; markings obliterated.

Genitals. Penis only slightly atrophic. Prostate very small, hardly of the size of a hazelnut. Seminal vesicles extremely small. Testes small, brownish on section; no fibrous strands or scars. Vasa deferentia soft and thin.

Brain. Meninges congested. The brain itself showed no changes. The sella turcica was greatly dilated by a hard tumor, the size of a large plum, shaped like a mushroom which projected into the cranial cavity. It was attached by a pedicle, the thickness of the little finger, to the left anterior part of the sella turcica. Its surface was very irregular. The whole tumor was calcified except several superficial parts. On section the latter were firm and of a yellowish color. The tumor was easily broken off at its base. The dimensions were: Anteroposterior, 4.5 cm.; transverse, 3.5 cm.; vertical, 3.5 cm. Anteriorly it pressed on both optic nerves. The third, fourth, and fifth cranial nerves were not involved. On the left side the tumor touched the tip of the temporal lobe. On the right side it did not reach quite so far. Superiorly it pressed between the olfactory tracts. Posteriorly it pressed on the optic chiasm and the infundibulum, which passed to the right of it.

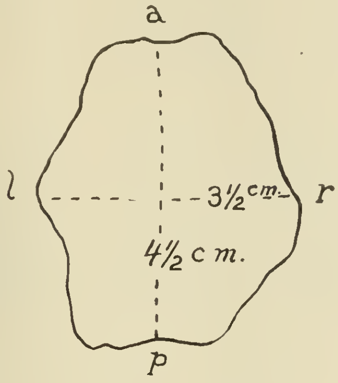
The hypophysis was pushed by the tumor to the right side of the sella turcica. Its weight (after fixation in formalin) was 0.57 gramme. Its surface was slightly granulated and a few cysts, a little larger than miliary size, filled with yellowish fluid were noted. Its measurements were: Anteroposterior, 13 mm.; vertical, 10 mm.; transverse, 6 mm. (The average weight in the male between sixty and seventy years of age is given by Erdheim and Stumme as 0.61 gramme.)

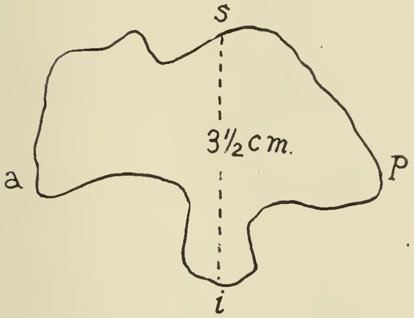
The sella turcica was greatly dilated and presented the following dimensions: Transverse diameter, 2.4 cm.; greatest anteroposterior diameter, 3. cm.

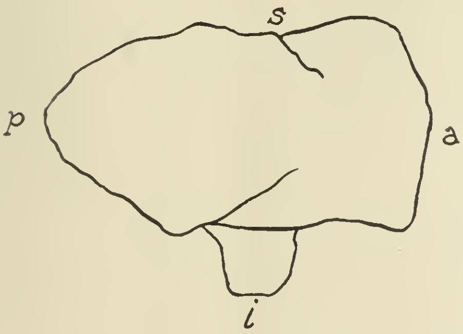
Microscopical examinations were made of the hypophysis, the cerebral tumor, the testes, pancreas, thyreoid, parathyreoid, adrenals, parotid, and intestinal tumor. The material was all preserved in formalin.

The Hypophysis. Before discussing the changes in this gland we will very briefly review the normal anatomy.

(See the paper of Erdheim and Stumme.) The hypophysis consists of two entirely distinct parts, the smaller posterior lobe, of nervous tissue, and the anterior or glandular part. The anterior lobe is composed of epithelial follicles in a very vascular stroma of delicate connective tissue. Most of the follicles are solid; in the posterior part of the anterior lobe they may have lumina containing colloid. The follicles are composed of three kinds of cells: 1. Eosinophile cells; these are the most numerous; they are fairly large, sharply outlined and have small, round, deeply staining nuclei. They are most numerous toward the posterior part of the anterior lobe. Their protoplasm contains granules which stain sharply with acid dyes. 2. Basophile cells, larger than the esoinophile, sharply outlined, with granular, basic staining protoplasm and pale large nuclei. Eosinophile and basophile cells together are often called chromophile cells. 3. Chief cells. These are the least numerous. The cell outlines are indistinct or absent as the protoplasm is not well preserved by our histological methods. The nuclei are intermediate in size and staining power between those of the first two classes of cells. The cells have a tendency to occur in groups and are found especially at the centres of the acini. From some acini they may be entirely absent. These are the cells which characteristically increase in the hypertrophy of the pituitary in pregnancy and thyreoid disease. The chief cells have granules of a fatty nature only brought out by special methods (Erdheim), which increase in size and number with advancing age. The acini, particularly in old age, often contain colloid secretion.







The hypophysis in the present case showed in the posterior lobe no marked changes. In the anterior lobe the appearance could be divided in three groups: 1. Places showing little change (the usual capillary stroma, with groups of epithelial cells in about the normal proportions, and some colloid follicles). In some places there were strikingly many chief cells. 2. Places with increase of connective fibrillar tissue, splitting apart the acini. 3. Places where the connective tissue greatly exceeded the parenchyma. The stroma was partly fibrillar and partly hyaline. More than half of the anterior lobe showed this increase of connective tissue, stroma with enormous reduction of the parenchyma.

The cranial tumor presented the appearance of a benign fibroendothelioma of the dura mater (Ribbert). It consisted of a fibrous stroma, in the mseches of which were cells with pale nuclei and poorly defined protoplasm. There were numerous round or angular calcium particles, but none of the typical concentric granules of the central nervous system.

The testes showed a picture of advanced atrophy. The walls of all the canaliculi were greatly thickened. Externally the canaliculi showed a much thickened elastica. Within this was a broad hyaline membrane, which did not stain with orcein but stained deeply with Van Giesen's stain. Within this were several layers of small atrophic cells. There were no traces of spermatogenesis or of the supporting cells of Sertoli. The stroma was fine fibrillar; no *Zwischenzellen.*

The thyreoid presented the appearance of an ordinary colloid stroma.

The parathyreoid showed nothing abnormal. There were very well marked nests of oxophile cells among the other cells. A little colloid was seen.

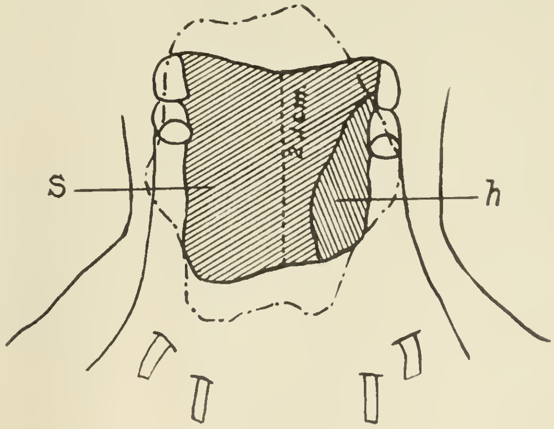
The pancreas showed marked, post mortem autodigestion.

The parotid showed fatty infiltration.

The adrenals showed thickening of cortex and medulla. The cells showed nothing unusual.

The tumor of the colon was an infiltrating adenocarcinoma of essentially glandular type.

In résumé the most essential pathological findings were: 1. Adiposity. 2. Atrophy of testicles, prostrate, and seminal vesicles. 3. A calcified fibroendothelioma of the dura, arising in the sella turcica, and compressing the hypophysis and the nervous structures in the floor of the fourth ventricle. 4. Pressure atrophy of the hypophysis, which, however, was of approximately normal size. 5. Colloid goitre. 6. Hypertrophy of the adrenals. 7. Carcinoma of the colon.



In the years following P. Marie's recognition of acromegaly and its relation to hypophysis tumors (1886) there were many cases reported of tumor involving the pituitary, without the occurrence of acromegaly. In 1901 Fröhlich described a new symptom complex which occurs in a special group of these cases. In most cases of acromegaly the hypophysis lesion is a peculiar type of adenomatous hypertrophy. This has led to the general view (Benda, Sternberg, Hansemann, Hutchinson, Zak, etc.) that acromegaly is an expression of excessive function. The recent results of surgical intervention support this view.

Fröhlich's syndrome, on the other hand, occurs generally in cases in which the hypophysis is injured or destroyed. The symptoms are: 1, Adiposity; 2, loss of genital functions (atrophy); 3, loss of secondary sexual characters, particularly of hair on face, axillæ, and pubes.

Fröhlich himself found that a number of cases in the old literature belonged to this category. Since 1901 many new cases have been reported.

The subject is of importance from two points of view; first that of diagnosis, and second that of the physiology of the pituitary gland. Now that the pituitary has become accessible to surgery the practical value of accurate diagnosis of these conditions has increased. Hitherto the cases without acromegaly have generally not been possible of accurate diagnosis.

Adiposity with genital dystrophy can not alone be regarded as diagnostic of pituitary tumor, as adiposity often accompanies genital atrophy from other causes. The combination of these two symptoms, however, with certain cerebral symptoms is extremely significant. These cerebral symptoms, one or more of which have been noticed in most of the cases, are: Headache, radiating to the eyes, amblyopia, temporal hemianopsia, later atrophy of the optic nerves, strabismus, diabetes mellitus or insipidus. Often there are no other sensory or motor disturbances; choked disc is often absent. This is especially true of slow growing tumors, which may give very few symptoms at all.

The diagnosis of tumor in the pituitary region can be made positive with the aid of x rays, which always show a marked

GROUP A.

Author	Tumor	Brain involvement	Condition of hypophysis	Age and sex	Adiposity	Genitals	Remarks
Mohr, 1841	Large (goose egg)	pressing deep into brain	destroyed	57, F.	very marked	....	six years brain tumor symptoms.
Glaser, 1883	Large sarcoma of hypophysis	growing into 3d ventricle	probably destroyed	48, F.	excessive	....	four to five weeks' duration.
Eisenlohr, 1876	Tumor hypophysis	....	....	23, F.	very marked	....	no brain tumor symptoms.
Rath, 1889 (Erdheim)	Spindle cell sarcoma of hypophysis	growing into 3d ventricles	....	63, M.	marked (217 lbs.)	....	tumor symptoms; polyuria, one year.
Rath, 1889 (Erdheim)	Round cell sarcoma; very large tumor	growing into ventricles	....	64, M.	marked	....	many years, amblyopia.
Ingerman, 1889 (Erdheim)	Large sarcoma	growing into brain	....	35, F.	colossal	....	tumor symptoms, one year.
Selke, 1891 (Erdheim)	Cystic papillary tumor	in infundibulum	no especial changes	42, F.	marked	....	....
Wills, 1892	Large (orange size) adenoma of hypophysis	bulging into brain	probably destroyed	26, M.	large subcutaneous fat deposit	....	tumor symptoms, fifteen years.
Walton and Cheyne, 1899	Perithelial sarcoma on sella turcica	....	probably invaded		not certain whether fat or myxœdema.	....	....
Burr, 1900 (Weiss)	Walnutsized glioma in hypophysis	pressing into ventricles	tumor in hypophysis	36, F.	very marked (300 lbs.)	....	adipositas dolorosa, optic neuritis, colloid degeneration of thyreoid, atrophy of secreting cells.
Fuchs, 1903	X ray showed excavation of sella (patient alive)	....	certainly involved	30, M.	marked	no diminution of function	eye symptoms.
Cestan and Halberstadt, 1903 (Erdheim)	Adenoma of hypophysis	....	probably destroyed	60, M.	marked.	....	....
Zak case 1, 1904	Large tumor	tumor growing into ventricles	hypophysis changed into a tumor	52, F.	enormous for nineteen years	....	tumor symptoms for six years.
Marburg, 1908	Mixed tumor of true pineal tissue, ependyma, and glia	in region of corpora quadrigemina involving pineal gland	perfectly intact	9, F.	excessive beginning with the other symptoms	normal	tumor symptoms eight months, colloid goitre hydrocephalus, optic atrophy.
Erdheim, 1904	Large adenoma of hypophysis	growing into pons	remains of hypophysis on lower side of tumor	54, F.	marked	genitals normal, very little hair over pubes	tumor symptoms.
Bregman and Steinhaus, (Erdheim)	Large tumor	distending third ventricle and growing into lateral ventricles	not injured	......	....	....	....
GROUP B.							
Finkelnberg, 1902	Round cell sarcoma, large tumor	all structures adjacent to ventricles extensively invaded	invaded, pineal gland also invaded	18, M.	emaciated, died of inanition	undeveloped, entire frame very undeveloped, cryptorchism	five years polyuria; blindness, optic atrophy.
Erdheim, 1904, case 1	Squamous cell carcinoma	growing into third ventricle	compressed and invaded	20, F.	....	infantile genitals, body small, breasts undeveloped; no hair on pubes.	....
Gotzl and Erdheim, 1905	Squamous cell carcinoma	growing into both lateral ventricles	slightly flattened, the granular cells abnormally small	young man	....	atrophy, impotence; loss of hair on pubes and axillæ	two years; diabetes; thyreoid showed diffuse colloid change.

Biro, 1908............	Sarcoma	....	tumor occupied hypophysis	18, M.	....	infantile genitals, hair absent	tumor symptoms, three years.
Nazari (Frankl Hochwart and von Eiselberg)....	Tumor of hypophysis	....	tumor of hypophysis	20, M.	....	infantile testes (trabeculæ of interstitial cells).	....
Mendel, 1899..........	Myxosarcoma of hypophysis	breaking into ventricles	invaded	F.	....	amenorrhœa, cystic degeneration of ovaries	tumor symptoms, four years; polydipsia, colloid goitre.
			GROUP C.				
Hippel, 1891...........	Large adenoma of hypophysis	growing into ventricles	remains of hypophysis found in tumor	28, F.	very marked for two years	irregular menstruation only	symptoms for two years.
Rabinski and Onanoff, 1892 (Erdheim).......	Squamous cell carcinoma	growing into base of brain	compressed	17, F.	strikingly fat	infantile genitals.	....
Boyce and Beadles, 1893 (P. 243).............	Hypertrophy of anterior lobe of hypophysis to double size	....	hypertrophy	42	fat and myxœdema	atrophy; hair absent from pubes and axilla	dementia; thyreoid atrophy (case probably does not belong here at all).
Boyce and Beadles, case 4	Cyst	....	cyst of hypophysis	62	fat or œdema	hair absent from pubes and axilla.	....
Strumpell, 1895.........	Large angiosarcoma undoubtedly arising from hypophysis cells	pushing into ventricles	occupied by tumor	33, F.	marked	cessation of menstruation	a case of acromegaly with diabetes.
Pechkranz, 1899........	Round cell sarcoma	Large tumor destroying base of brain	no trace left of hypophysis	17, M.	extremely fat, looks like œdema	penis and testes of a five year old child; breasts large; feminine type of body; hair absent	tumor symptoms for two years.
Benda, 1900...........	Teratoma	in infundibulum	compressed and completely atrophic, epithelial strands in vascular connective tissue	38, M.	....	infantile testes	dwarf.
Fröhlich, 1901.........	X ray showed excavation of sella, cyst at operation	....	large cyst	17, M.	very excessive	infantile genitals, hair absent	successfully operated, 1907, by von Eiselsberg.
Zak, 1904, 2d case......	Endothelioma with calcification arising from dura of planum sphenoidale and sella.	bulging into third ventricles	sella excavated; hypophysis microscopically normal	46, M.	marked	hypospadias; feminine type of pelvis; very little hair on pubes or face.	tumor symptoms.
Erdheim, 1904, 2d case.	Squamous cell carcinoma	pushing into third ventricle	slightly flattened but microscopically normal	16, M.	marked	infantile habitus, hair absent	tumor symptoms, four years.
Erdheim, 1904.........	Adenoma of hypophysis	growing into base of brain	sella turcica distended; remains of hypophysis seen in tumor	20, F.	marked	uterus strikingly small and atrophic.	....
Bartels, 1906..........	Squamous carcinoma	involving base of brain	probably invaded cyst in posterior lobe	21, M.	marked	cryptorchism infantile testes (immature epithelium)	symptoms, seven years; thyreoid follicles, distended, colloid.
Berger, 1907 (Feankl Hochwart and von Eiselsberg)	Squamous carcinoma	in infundibulum	compressed but histologically normal	16, M.	marked	genitals very small; no hair; patient infantile	tumor symptoms.

and characteristic dilatation of the sella turcica.

The results of experimental inquiries into the physiology of the hypophysis has been disappointing. It is impossible here to review the literature. Only a few important points will be touched on. (See Munzer, in the *Berliner klinische Wochenschrift*, 1910, p. 342, for a review of the physiology.) The extirpation experiments have been most contradictory. Horsley, Gaglio, Fichera, Friedman and Mass, Le Monaco, Van Rynberk, all found that extirpation of the hypophysis had no especial bad effect; whereas Marinesco, Vassali and Sacchi, Caselli, Gatta, Pireone, Vedova, and Paulesco all found that extirpation caused death. Paulesco's work is most valuable. He found that total extirpation in dogs was invariably followed by death within twenty-four hours, whereas control animals on which every step of the operation (including brain trauma and opening of the third ventricle) was done, excepting the actual removal of the gland, recovered entirely. If, however, even a small part of the gland was left behind, the animals survived for varying lengths of time. Removal of the anterior lobe was equivalent to total extirpation whereas removal of the posterior lobe had no particular effect. If this work is to be relied on the hypophysis is an organ of vital importance. This work has recently been confirmed in part by Cushing.

The results of surgical operations, which only have recently been undertaken with any success (Schloffer, Frankl-Hochwart and Eiselsberg, Hochenegg, Cushing) also throw some light on the physiology of the pituitary. In cases of acromegaly in which parts of enlarged hypophysis were removed by Hochenegg, the acromegaly diminished (Exner). The patient originally described by Fröhlich was operated on by von Eiselsberg, had a cyst in the region of the hypophysis opened. The cerebral symptoms and the adiposity diminished greatly.

Many observations have shown that there is some connection between the hypophysis and thyreoid. Enlargement of the hypophysis after extirpation of the thyreoid has been observed repeatedly (Rogowitsch, Alquier, Stieda, Gley, etc.). This hypertrophy (like that in pregnancy) involves the chief cells, not the chromophile cells. Comte, furthermore, noticed marked hypertrophy of hypophysis in twelve out of thirteen cases of goitre with degeneration of the thyreoid, exclusive of cases of Basedow's disease. On the other hand, in Basedow's disease Benda observed that the hypophysis is unusually small. Hypophysis hypertrophy has often been noted in cretinism and in myxœdema (Comte, Osler, Bourneville, Bricon, and others). These facts possibly point to a compensatory function of the pituitary in thyreoid disease.

Recently Erdheim and Stumme have showed that a regular and very characteristic hypertrophy of the anterior pituitary lobe occurs in pregnancy. This hypertrophy, which was first recognized by Comte in 1898, is to a large extent permanent and increases with each succeeding pregnancy. It is due to the enormous increase in number of the so called chief cells.

There are a few other valuable observations. Fichero noticed that castrated steers and cocks always showed, after some months, a hypertrophy of the anterior pituitary lobe. Exner and Gschmiedler found that animals, into which multiple hypophyses had been implanted, grew much fatter than control animals. The effects of pituitary extracts on metabolism and on blood pressure (Livon, Schafer, and Vincent) have been too contradictory to mean much. Sandri, Gemelli, and others have attributed an antitoxic function to the hypophysis. There are some facts pointing to a correlation between hypophysis and adrenals.

The sum of our present knowledge is little more than that there is some sort of a relation of the pituitary to the functions of the sexual glands of the thyreoid, to pregnancy, to the growth of bone skin and hair, and to the deposit of fat, and that the anterior lobe is an organ of vital importance.

What light can our case throw on the disputed question of the functions of the hypophysis? Most workers assume that there is an internal secretion, and explain various phenomena as due to its increase or diminution. The large number of cases with Fröhlich's syndrome associated with injury or destruction of the hypophysis has led to the general opinion that this syndrome is due to diminished secretion.

Erdheim holds a different view. He draws attention to the pressure on nervous structures in the region of the infundibulum and adjacent to the third ventricle, and to the fact that in several cases no lesion of the pituitary itself was demonstrated. He believes Fröhlich's syndrome to be due to injury of some as yet unknown nervous centre.

The present case can only be considered in connection with the other recorded cases. I have made a table of thirty-six cases in the literature (excluding cases of acromegaly, with one exception, where Fröhlich's syndrome and acromegaly were combined). They are arranged in three groups: *A*, Cases in which only adiposity was noted; most of these date from the years before Fröhlich's observation, and it is possible that genital disturbances may have been present but not noted in many of them. *B*, Cases in which only genital atrophy was present. *C*, Cases in which both general atrophy and adiposity were observed.

The anatomical relation of the tumors to brain and hypophysis are of first importance. Practically every case of hypophysis tumor in which the condition of the base of the brain was noted, showed either pressure on or involvement of the structures in the region of infundibulum and third ventricle. This, at first sight, gives strong support to Erdheim's contention that the symptoms are due to nervous centres and not to hypophysis injury. A little consideration shows, however, that this anatomical condition is practically inevitable. Tumors which start in the sella turcica, at first cause dilatation of the sella. As soon as a tumor attains more than minimal size it grows in the direction of least resistance, upward in the direction of the third ventricle, in the space between the optic chiasm and pons. It cannot, therefore, be said that only those cases which show brain involvement give Fröhlich's symptoms, because practically all cases show more or less brain involvement.

The second point of importance is the condition of the hypophysis. In the descriptions of the early cases no mention is made of this; but the text makes it certain that the hypophysis was invaded; these cases are put down in our table as "probably invaded" or "probably destroyed." Including these there are twenty-two cases in which the gland was invaded and more or less completely destroyed.

Erdheim's view that the injury of the hypophysis is not connected with the symptoms is supported by seven cases in which the hypophysis may have been intact: Selke's case (1891); Zak's second case (1900); Bartels's case (1906); Berger's case (1907); Marburg's case (1908); Bregman and Steinhaus case; and Erdheim's second case (1904).

The first two are not very accurately described: and in Bartels's case there was a cyst in the posterior lobe. In Berger's case the hypophysis was certainly compressed. In the cases of Marburg and of Bregman and Steinhaus the hypophysis was uninjured, but the tumors were very large and it is hard to see how the hypophysis could escape at least being compressed. In Erdheim's case the hypophysis was slightly flattened but microscopically normal. The possibility of a secretory disturbance from compression, even with a gland microscopically normal, cannot be overlooked. In our cases the hypophysis was compressed and showed very marked atrophy and fibrous induration.

It has been suggested (Schuller, Tandler, and Gross) that the adiposity in those cases is not of cerebral origin but is secondary to the impaired genital function. The existence of several undoubted cases in which the adiposity was found with no genital atrophy (Fuchs, Marburg, Erdheim) show that at any rate this is not regularly the case. Other brain lesions are also at times accompanied by extreme adiposity. (Marburg.)

It would simplify matters if we could accept Marburg's classification of pituitary disturbances into three groups: 1. Oversecretion, accompanied by acromegaly; 2, undersecretion, with Fröhlich's syndrome; 3. absence of secretion, with severe cachexia.

There are, however, many cases which do not fit into this scheme—for instance, of Fröhlich's syndrome with complete destruction of the pituitary. Nevertheless a consideration of the present case and of the other cases reviewed, leads us to the conclusion that Erdheim's view of the nervous origin of Fröhlich's syndrome requires more proof than it has yet received, and that the theory of an internal secretion should be retained as a working hypothesis.

I wish to express my thanks to Professor L. Pick.

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SPONTANEOUS APPEARANCE OF INDIGO BLUE IN THE URINE.

By A. L. Benedict, M. D.,
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The rarity of the appearance of indigo blue in the urine, except after artificial oxidation of indican, leads me to place this case on record:

Case. Patient, No. 20 of 1889-1890[1], now aged fifty-five, hard drinker but seldom drunk, had an attack of gastroenteric fermentation during the summer of 1910, and the urine, though free from albumin, sugar, etc., gave a marked indican reaction for several days. On July 30th, it had an alakalinity of thirty-eight degrees, by direct titration. This is the highest degree of alkalinity that I have ever encountered, even after giving large doses of sodium bicarbonate as in the present case. Indeed, if one rules out putrefied urine, due to long standing, and has little experience with spontaneous putrefaction in cystitis, pyelitis, etc., an actual alkalinity by phenophthalein is quite rare. Even after alkaline medication, not very carefully checked, more than ten degrees of alkalinity is unusual. On August 1st, after the administration of benzoic acid in a proprietary mixture used as a matter of convenience (usual apology offered), the reaction again became acid by the same number of degrees, thirty-eight, indican still being present.

A few days later, the patient noticed that the urine was of a peculiar brownish green color and he brought it for further examination. The first thought was of an aniline dye, either derived adventitiously from a colored supplement, label, etc., or, as in two cases that I have seen, from some food adulteration. This was, however, excluded. On adding chloroform, the blue was extracted and, from the correspondence with the previous and subsequent indican tests, the difference in tint from the aniline cases mentioned and the exclusion of adventitious and dietetic causes of coloration, was regarded as indigo. The impure brownish green color of the urine before shaking with chloroform was regarded as the mixture of indigo with the ordinary yellowish brown pigment, the urine containing a uratic deposit.

It is suggested that the benzoic acid may have acted as an oxidizing agent both in this case and in various others in which the spontaneous passage of blue urine has been noted. This occurrence is well authenticated but quite rare. The present case is the only one that I have seen. I have examined somewhere between ten and twenty thousand samples. Chemical criticism of the benzoic acid hypothesis would be of value. If tenable the coincidence of indol formation with the dietetic or medicinal administration of benzoates in considerable amounts would afford an explanation of the occasional appearance of blue urine. Indeed, one would expect it more commonly.

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[1] Each patient is assigned a serial number in the fiscal year in which he first appears. This designation, by number and year, is permanent, affords a convenient way of referring to patients without use of name or initials and unifies business and scientific records. It also gives an immediate clue to history notes. The sole objection is that the figures used are less imposing than those used in relisting patients year by year.

INSUFFICIENTIA PYLORI.

By BERNARD FRANKEL, M. D.,
New York.

In his article upon this subject, published in the *Medical Record* of November 12, 1910, Dr. Mark I. Knapp states under diagnosis: "When one hour after the test meal has been eaten the aspiration yields either no contents at all, or one or two cubic centimetres of coarse pieces imbedded in mucus, the diagnosis of insufficientia pylori is to be made." In the same article he further asserts that: "Einhorn introduced a distinct type of a gastric pathological condition, based upon the absence of chyme after one hour, and termed such condition achylia gastrica."

As a matter of fact, however, such diagnosis of insufficientia pylori or achylia gastrica is completely at variance with the clinical experience of gastrologists. Aspiration of only "a few cubic centimetres of coarse pieces imbedded in mucus" is known to be more characteristic of chronic gastritis.

As to "complete absence of chyme after one hour" this was a very common occurrence among my stomach patients at the Vanderbilt Clinic. Upon increasing the bulk of the test meal, however, I succeeded in aspirating subsequently a normal amount of contents from the very same cases. Such was also the experience of Dr. A. L. Benedict and others.

Our visceral functions are not regulated by any clockwork mechanism, and physiological variations from the accepted standards of time, etc., are frequently brought about by perfectly normal factors.

It is evident, therefore, that Knapp's chief symptoms are not at all pathognomonic. In fact a positive diagnosis of insufficientia pylori would only be justified if, upon inflation of the stomach with air or carbon dioxide gas, we found that this air or gas immediately escaped into the duodenum and failed to distend the stomach. Knapp mentions the inflation test only as of secondary importance, and does probably not use it even in corroboration of a diagnosis. How could we, otherwise, explain his incredible discovery of seventy-eight per cent. (!) of insufficientia pylori among 100 tuberculous patients?

The diagnosis of primary achylia gastrica—contrary to Knapp's assertion—is never based solely upon the absence of chyme in the stomach after one hour; furthermore it must be positively excluded if good gastric digestion is found at any stage of the process.

Such diagnosis can only be made if upon aspiration—as early as necessary—we find in the usually small amount of coarse chyme a total absence of free or combined hydrochloric acid, as well as of all the enzymes and proenzymes, even in the earliest stages of the disease. This last fact distinguishes it from achylia secondary to cancer or atrophic gastritis, in which, even though hydrochloric acid is absent early, the enzymes and proenzymes disappear only in the later stages.

In ascribing to excessive motility the cause of prolonged pyloric closure, Knapp ignores its chief regulating factors, namely, the reflexes from the duodenum and the degree of acidity of the chyme.

It has been demonstrated by Dr. Serdinkov and pointed out by Pavlov[1] that injections into the duodenum (through a fistula) of small quantities of acid solutions or of pure gastric juice, cause reflex closure of the pylorus, which is maintained as long as such injections are continued. As the pylorus opens again only after the chyme in the duodenum is neutralized, a superacid condition of the chyme, by delaying such opening, causes longer retention of the chyme in the stomach and its finer subdivision by the prolonged gastric digestion.

This explains why finely subdivided chyme is usually found in excessive acidity or oversecretion and not in excessive motility (which often accompanies subacidity).

Knapp undertakes to prove experimentally that fine subdivision of the chyme is effected only by the grinding work of the stomach walls and not at all by the chemism of digestion; but he succeeds in doing just the opposite. Thus his experimental fine subdivision of bread by artificial digestion when assisted by stirring with a glass rod, shows only that the effective force was the chemical digestion, aided by a thorough mixing of the contents. That the stirring could not cause any grinding is too evident.

In a similar manner, when Knapp attempts to prove that gravitation is the only factor in the passage of the chyme through the pylorus, we are led to diametrically opposite conclusions by logical reasoning from the facts he himself develops. We find that by having his patient in the left lateral posture he caused only a temporary delay in the emptying of the stomach, but no complete retention of chyme even for the length of time during which the same posture was maintained. This fact forces upon us the conclusion, that the food was propelled —even against gravity in this case—by gastric peristalsis. The peristaltic waves cause constructions behind the contents and relaxations of the pylorus in front of them, thereby effecting "the intermittent passage or chyme into the duodenum by jets of from half a cubic centimetre to a few cubic centimetres about every quarter of a minute," as described by Pavlov[1] and actually observed (through fistulæ) by Hirsh,[2] von Mehring,[3] Tobler.[4]

Gravity is of assistance only in certain postures, as it may bring the food sooner within grasp of the more vigorous peristalsis of the preantral and pyloric portions of the stomach.

In the clinical description of his cases of organic insufficientia pylori, Knapp unconsciously presents to us very good pictures of neurasthenia, probably accompanied by subacidity and supermotility. It is therefore not at all surprising that he achieved such brilliant and marvellously rapid cures in his cases of supposed organic pyloric insufficiency—some of even forty years' standing—by simple diet, hygiene, suggestion, and medication for improving the vicarious intestinal digestion. But if such magical results are obtained by Knapp in organic pyloric insufficiency of forty years' duration, why does he not, in a similar manner, try to rapidly cure a dilated heart of only a few years' standing?

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[1] *The Work of the Digestive Glands*, p. 187.

[2] *Zentralblatt für klinische Medizin*, 1892, p. 993.

[3] *Verhandlungen des XVI Kongresses für innere Medizin*; 1893, p. 471. *Therapeutische Monatshefte*, vii, p. 201; 1893.

[4] *Zeitschrift für physiologische Chemie*, xlv, p. 185; 1905.

To conclude then, a careful perusal of Dr. Knapp's article shows that the author utterly fails of his purpose, which was to prove that primary achylia gastrica was a myth, and that cases so diagnosticated were those of unrecognized pyloric insufficiency. After exhaustive study of the subject, one becomes convinced that, while the diagnosis of primary achylia gastrica has been well established and corroborated by the observations of leading modern authorities—an authentic case of undisputed *organic* (the functional, nervous type of Ebstein does occur) pyloric insufficiency, one that has stood the test of repeated inflations *in vivo,* constantly for a sufficient length of time—such a case has yet to be recorded.

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MAGIC AND MEDICINE: A STUDY IN THE BORDERLAND OF SCIENTIFIC LIGHT AND DARKNESS.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I., M. R. I. A.; etc.,
Dublin, Ireland.

The progress—real and imaginary—of science, pure and mixed (or leavened), true and feigned (or forged), still leaves a wide borderland of circumferential demarcation between the recognizable limits of medical *science* (of unquestionable soundness and purity) and medical *theory*—or hypothesis, or assumption, or surmise. The fact, as it presents itself to the present writer, would seem to be that it had originally appeared good to an all knowing Providence to place obstacles in the way of attainment to a perfect knowledge of the relationship of living and nonliving matter which have, up to the present at least, proved completely insurmountable. Those who have recognized this fact in good time have, I strongly incline to think, always proved to be the wisest physicians. Then, the weak enthusiasts, while well meaning and even well informed, have, I should say, injured the cause and the credit of medicine by their explosive announcements of their fancied discoveries of the "master key," and of sublimated specimens of specific treatment based upon the most subtly sound and up to date "scientific" principles and foundations, as have the whole collective body of blatant quacks—whose gaseous pretensions and explosive advertisements could deceive only the uninitiated "general"; and which were foredoomed, by the very nature of their genesis and development, to early failure and decomposition. One of the most conspicuously weak seams in the harness of the medical knight errant of the present generation is presented, I venture to suggest, not so much by the deficiency of his acquaintanceship with facts (of a knowledge of which there is more outside the head of every medical son of Adam than inside) as by his defective power of reasoning thereon. The fact (as I believe it to be) seems to be allowed to remain generally unrecognized that the "well educated" denizens of the thoroughfares of our great cities—and there are very many of them—have attained to little, if any, real logical superiority over their illiterate contemporaries. And their case, widely epidemic in type as it is, seems to me even less curable by far. For the individual who does not know his alphabet *must* confess his ignorance; while the other who reads his newspaper every morning, and is thereby and thereon placed thoroughly up to date, is quite satisfied with his rightful power to despise the opinions which do not coincide with his own—whencesoever they may happen to emanate. So that it will probably prove much safer to recognize that, even in our own twentieth century, the progressive movements of medical science are at least as often gyratory as rectilinear. The very fact of the application of the wondrous properties of the x rays to the examination of the human skeleton has led in many quarters to carelessness in the cultivation of the *lactus eruditis,* and to the growth of relative ignorance of many of the most important of the subtler data of human anatomy. The present omnipotence and omniscience of bacteriological pathology has, most assuredly, led to relative carelessness—and consequent inefficiency—in clinical observation, and the accuracy of diagnosis and prognosis which must be based thereon. And in presence of all the vaunted attainments of the scientific physician of the present generation, and the unquestionable advances and conquests of pure physical science, we have flourishing around and within our most highly civilized communities, the selective faith in the mesmerist, and the spiritualist, and the clairvoyant, and the mind healer, and the faith healer, and the Christian Science healer—and even the more modestly veiled use of charms and amulets. The defective qualities of the present position may be perhaps referred, with evenhanded discrimination of justice, partly to the human body and partly to the human mind. Curiosity in the study of anatomy—on which the healer's art is fundamentally based—has been blunted by the accumulated results of researches into all departments and units of the animal kingdom. And the unsatisfactory status of physiology is a (surely necessary) consequence of the attempt to adapt the qualities and known laws of nonliving matter to those of the living organism — while practically ignoring the mysterious factor of the *vital force.* These facts have led me to think that it might not be inopportune to call a momentary halt in the self satisfied appreciation of our present attainments, while taking a bird's eye view of the tortuous passage of human opinion during the past ages through one of the domains of thought and discussion most nearly outlying the borderland of medicine. The result, as now presented to the reader, is an expansion, with connecting and collateral comment, of some notes and observations which I published at the time of the tercentenary celebration of the birthday of one of the most philosophical and accomplished of English speaking physicians, the illustrious author of the *Religio Medici.*

> It is a riddle to me how this story of oracles hath not wormed out of the world that doubtful conceit of spirits and witches; how so many learned heads should so far forget their metaphysicks, and destroy the ladder and scale of creatures, as to question the existence of spirits; for my part, I have ever believed, and do now know, that there are witches. They that doubt of these do not only deny them, but spirits: and are obliquely, and upon consequence, a sort, not of infidels, but atheists. Those that, to confute their incredulity, desire to see apparitions, shall, questionless, never behold any, nor have the power to be so much

> as witches. The devil hath made them already in a heresy as capital as witchcraft; and to appear to them were but to convert them. . . . Again, I believe that all that use sorceries, incantations, and spells, are not witches, or, as we term them, magicians. I conceive there is a traditional magick, not learned immediately from the devil, but at second hand from his scholars, who having once the secret betrayed, are able and do empirically practise without his advice; they both proceeding upon the principles of nature; where actives, aptly conjoined to disposed passives, will, under any master, produce their effects. Thus, I think, at first, a great part of philosophy was witchcraft; which being afterwards derived to one another, proved but philosophy, and was indeed no more than the honest effects of nature: what indented by us is philosophy; learned from him, is magick."

Sic cogitavit—and wrote and published, in lucidly emphatic English, for the enlightenment and edification of his contemporaries and of posterity—in the year of grace 1635, the author of the famous prose classic, *Religio Medici;* regarding that special item of his creed which was concerned with *witches* and *witchcraft.* And the writer, who was then aged thirty, retained this article of his spiritual faith throughout an exceptionally studious (as well as actively observant) life with unflinching conservatism; for we find him at the close of another period of thirty years giving "expert" evidence at a trial of two women who were accused of witchcraft—testimony which aided most materially in procuring their conviction and execution (at the stake). It will furnish the reader with some interesting collateral associations of the tortuous and tangled pathway of the progress of human thought, to recall the facts that the date of Sir Thomas Browne's birth (1605) corresponds to that of the publication of the first issue of Francis Bacon's *Advancement of Learning;* his *Religio Medici* was published ten years after the appearance of Galileo's epoch making *Dialogo;* and the noted witch trial in which he prominently figured was coeval with the ravages of the "Great Plague" of London; the horrors of which so fruitfully inspired the genius of Daniel Defoe and of Harrison Ainsworth, respectively—and formed the mainspring of many riotous demonstrations of spiritual belief among numbers of the more emotional of the contemporaries of that event. Such curious coincidences of date could not fail to strike every student of the history of human progress, and of scientific discovery and philosophical contemplation and discrimination, in the record year of centenary incidence and celebration through which we have just passed: the annual cycle which presented the quatercentenary anniversary of the births of John Calvin and Michael Servetus, and the centenary of those of William Gladstone and Charles Darwin. And I would take the opportunity of calling the attention of physicians to the fact that, of the former pair of contemporary specimens of phenomenal genius, Servetus presents—as I have elsewhere, I think, conclusively shown—the clearest claim to the discovery of the circulation of the blood; while Darwin's observations and methods are those of the *mens medica* which he so conspicuously inherited, and so happily and fruitfully "evolved."

In order to the formation of anything approaching fairness of judgment regarding the opinions of Thomas Browne on matters supernatural, it is absolutely necessary that we should divest ourselves, as far as possible, of all latter day prejudices and preconceived notions; and fancy ourselves, for the time being, transferred, in deed as well as in thought, to the extremely different surroundings and conditions under which he and his contemporary compatriots lived their strenuous lives. We must, in imagination, divest England's harbors of their steamships, torpedo boats, and torpedo destroyers; strip the country bare of all its steam engines, of every denomination; of its railroads, locomotives, and railway whistles; of its bicycles, its motors, and its dirigibles and aeroplanes; of its electromagnetic machinery, its telegraphs, telephones, arc lights, swan lights—and even gas lights; of its anæsthetics, antiseptics, microbical pathology, scientific sanitation and drainage; of its microscopes, its spectacles, and its artificial dentures; of its steam ploughs and harrows, and horse drawn mowing and reaping machines; of its ubiquitous chronometers, thermometers, and barometers; and obliterate introspectively its omnipresent and omnipotent newspapers, its universal education, its legalized vaccination, its unlimited voluminous and journalistic reading, its broadcast free libraries, its manhood suffrage (its coming government by suffragettes), and its stereotyped democratic denial of "the right divine of kings to govern wrong." The author of the *Religio Medici* may be said to have been ushered into the world on the much agitated—we may even denominate it earthquake-shaken—borderland which separated, while it connected the old world of thought and the new. Thus, in his generation, England was the amphitheatre specially destined for the display of historical, social, political, and religious convulsions: a fact which cannot fail to be vividly impressed upon every reader who remembers that he was the junior of the ill fated Charles I., by some five years; and had reached the age of forty-four at the date of the execution of the monarch to whom he had, with characteristic conservatism, remained devotedly loyal to the end: that he was fifty-three at the death of Oliver Cromwell; fifty-five at the date of the "happy restoration"; and was knighted (eleven years before his death), at the age of sixty-six, by "The Merry Monarch"; on the occasion of the visit of the latter to Norwich. Thus he attained his majority in the course of the annual cycle in which, as some of the scientific seers have taken care to indicate to admiring posterity, the mantle of modern philosophy dropped from the shoulders of Francis Bacon (1561-1626) to alight on the infant form of Robert Boyle (1626-1691). In the earlier portion of his career Browne was, accordingly, a contemporary of Shakespeare (1564-1616), of Cervantes (1547-1616), of Sarpi (1552-1623), of Napier (1550-1617), of Kepler (1571-1630), of Galileo (1564-1642), of Torricelli (1608-1647), and of Descartes (1596-1650). He had attained to the fairly ripe age of forty-two at the time of the death of William Harvey (1578-1657), and was forty-seven at the demise of Inigo Jones (1573-1652). Ten years before the latter date, there had occurred another of those spiritual successions which specialists and visionaries do not fail to indicate from time to time on the landmarks of intellectual expansion and progress: the year of grace 1642 had been rubricated for all time in the annals of scientific genius, by the death of Galileo Galilei and the birth of Isaac Newton (1642-1727). It is thus to be seen that Sir Thomas Browne lived, as regards the progress of humanity and march of intellect, in an age of rare—it might even be called unprecedented—activity; while, with regard to his more immediate associations and surroundings, he had personal experience of one of the most unsettled, and even gruesome, generations of England's political and social history. It was a time in which strange sounds were heard in the air, strange visions were communicated in dreams, strange portents were witnessed in the firmament, and—for a large proportion of England's population—all hope was directed toward the future world; as no obvious grounds for hopes terrestrial, or reliance on the agents or the events of the present, seemed to have been granted to themselves or their children. Still, although throughout his own country this period of terrible unrest prevailed during so considerable a part of his life—disturbing and destructive as it proved to be in so many directions, to both men and things, to opinions and morals as well as to persons and property—it seems to have very little affected the even tenor of his earthly pilgrimage; which was essentially that of the ideal medical practitioner and unwearying seeker after truth. The mind of the true philosopher, of the devoted seeker after truth for its own sake, has generally been found to pursue its divine calling all the more ardently and continuously in a generation and environment in which the activities of inferior types of morality and mind were solely directed to—and consumed by—the unceasing struggle for political conquest abroad, or legal conquest at home; for social supremacy, or financial ascendancy.

It may, indeed, be truthfully affirmed that at the opening of the seventeenth century many of the time honored, fossilized items of superstitious belief had been exploded, or very badly shaken, so far as the inner circle of the leaders of thought were concerned; but it still required generations for the rays of enlightenment to penetrate to the multitude. Even the "learned vulgar," to whose ranks Browne so suggestively alludes, managed long to screen their mental vision from the irritating scintillations of novel, and entirely undesired, items of philosophic and scientific doctrine. The old blend, resulting from the original adaptation of Christian teaching to the preceding Pagan nature worship, still constituted the true foundation—all the more firm, perhaps, from the fact of its being apparently submerged—of the stock in faith of the rural districts. England's Caledonian King, James I., who reigned from 1603 to 1625, was, all through life, an explosively demonstrative believer in the *Witch* and *Witchcraft* articles of faith. He even went to the trouble of publishing under his own name a treatise on *Dæmonologie*, which expresses the orthodox views of the period on this subject in the most uncompromising—and uncharitable—form. Some dozen years before he ascended the English throne, he had taken the most active personal interest in the trial of a Scotch lady of rank, who had, in the trying time of her parturition, summoned to her aid a wise woman who bore the somewhat prophetic name of Agnes Simpson. The latter had enjoyed in her own locality a lofty reputation for her powers in shortening the period of childbirth, and diminishing the intensity of its agonies. Such practice constituted an act of rebellion against the primal curse pronounced against Eve as a punishment of her disobedience—according to the interpretation of the then young King of Scotland and his spiritual advisers. His Majesty assiduously watched the trial, and his interest helped to promote the conviction of both lady and patient of witchcraft and blasphemy. Both were burned at the stake—one having been admitted to the grace of strangulation before combustion! Such were religious doctrine and royal opinion in Scotland toward the close of the sixteenth century. They were assiduously impressed upon England by the same monarch and his advisers when the opportunity came, as it did in the early years of the next. And let inquiring readers remember, too, that it was under the auspices of James I. that the "*authorized*" *version* of the Bible was prepared; and ponder well the association. Another century saw comparatively little change of opinion on these heads among the average members of the population. But, let us now slip over a further intervening century and a half of human existence, and we find ourselves doomed to hear, in the very middle of the scientific, and sceptical—and materialistic, and progressive—nineteenth century, quite as noisy an explosion of orthodox opinion from the leading representatives of the body of the Caledonian clergy, arising from a closely similar source of inspiration, against Sir James Simpson; on account of his free adoption in obstetric practice of the use of the newly discovered anæsthetic, chloroform! The arguments of the prosecutors were as of old; clerical methods do not readily lend themselves to changes of fashion. Fortunately, for suffering humanity in general, and for its great benefactor, Sir James Simpson, in particular, the secular arm had, in the latter part of the long interval, succeeded in paring down the clerical claws; otherwise the "blasphemous" practice of Sir James Simpson, in the middle of the nineteenth century, would most assuredly have been as *warmly* rewarded as had been that of Agnes Simpson of the same city some two and a half centuries before. Thus has the subsequent wave of human thought and opinion, of which the largest crest borne bubbles came eventually to receive the now familiar labels of rationalism, and materialism, and altruism (with their respective infinite series of attached excrescences of Darwinism, and Mendelism and Eddyism, and the endless linkages of the associations of each) conveyed some measure of physical salvation to the suffering humanity of the more recent generations. If Christendom has lost, as I cannot avoid the conclusion that it really has, its highest powers of spiritual flight, there exists, far less of terror in the existence of the lower—fixed and unprotected—strata of its (vast majority of) human constituents. The undulatory progress, with alternating regress, of the human struggle for the attainment of truth, and justice, and happiness, remains ever a (perhaps *the*) most instructive and interesting subject for the exercise of the special faculties which give man the dignity and leadership that place him high above all other members of the animal kingdom. It does not require a very minute knowledge of the recorded dates of the history of the "ascent of man"—physical and mental, political and philosophical, religious and moral—to be able to recognize the ever-recurring periods of ebb and flow which have throughout characterized its restless movements. Every new rise of its tidal wave has swept away some of the old monuments of achievement, and has at the same time borne forward some treasure laden argosies of new (or rediscovered) thought and invention; and the succeeding ebb has exposed the wreckage which furnished data for new speculation, while leaving behind its water mark of deposited "*superstition*"; which is to be again in turn whelmed beneath the advancing waters of the next, and higher, succeeding inundation.

The peculiar and painful uncertainty of the position and extent of the *loci* of available contact between the circumscribing curves which limit the respective areas of true science, and the special results of the same that are available for, and strictly applicable to, the theory and practice of the healing art, are alluded to, in a passage of almost prophetic insight and brilliancy, by the celebrated Lord Chancellor Bacon; whose curiosity had kept him "puddering in physick" all his life, and whose actually *negative* knowledge of physical and philosophical science did not blind his keen powers of general observation:

> . . . this various and subtile composition and fabrick of mans body hath made it, as a curious and exquisite instrument, easie to be distemper'd; therefore the Poets did well *to conjoyn Musick and Medicine in* Apollo; *because the Genius of both these Arts is almost the same;* and the office of a Physician consisteth meerly in this, to know how to tune and finger this Lyre of mans body; that the Harmony may not become discordant and harsh. So then this inconsistency, and variety of the subject, hath made the Art more conjectural: And the Art being more conjectural had given more large scope, not only to error, but even to imposture. *For almost all other Arts and Sciences are judg'd by their power and operation; and not by their success and work. The Lawyer is judg'd by the virtue of his pleading, and not by the issue of the Cause; the Master in the Ship approves his Art, by the directing his course aright, and not by the fortune of the voyage. But the Physician, and perhaps the Politick, hardly have any proper particular Acts, whereby they may make a clear demonstration of their Art and abilities; but bear away honour or disgrace principally from the event which is ever an unequal judicature.* For who can tell, if a Patient dye or recover; or if a State be preserved or ruin'd; whether it be by Art or Accident? Therefore it often falls out, that the Impostor bears away the Prize. Virtue the Censure. Nay the weakness and credulity of men is such, *As they often prefer a Mountebank, or Witch, before a Learn'd Physician.* Therefore the Poets were clear and quick-sighted, when they made *Æsculapius* and *Circe,* brother and sister; both children of the Sun, as in the Verses; of *Æculapius* the Sun's Son:
>
> *Ille repertorem Medicinæ talis & artis,*
> *Fulmine Phœbigenam Stygeas detrudit ad undas.*
>
> And likewise of *Circe,* the Sun's Daughter,
>
> *Divas inaccessos ubi solis filia lucos*
> *Assiduo resonat cantu: tectisque superbis*
> *Urit odoratam nocturna in lumina Cedrum.*
>
> For in all times in the reputation and opinion of the Multitude, Witches, and old Women and Impostors have been rival Competitors with Physicians; and have even contended with them for the fame of Cures. And what I pray you follows? Even this, that physicians say to themselves, as *Solomon* expresseth it upon a higher occasion, *If it befals to me, as it befals to the fool, why should I labour to be more wise?* And therefore I cannot much blame Physicians, if they use commonly to intend some other Art, or Practice, which they fancy more than their own Profession. For you shall have of them Poets, Antiquaries, Criticks, Rhetoricians, Politicks, Divines, and in these Arts better seen, than in their own Profession. Nor doth this come to pass, as I suppose, because (as a certain Declaimer against Sciences, objects against Physicans) they have ever Conversant before their eyes such loathsome and sad spectacles, that they must needs retire their minds from these objects, to some other contemplations; for as they are men, *Nihil Humani a se alienum putent,* but for this reason, whereof we now speak; namely, that they find, *that Mediocrity and excellency in their Art, maketh no difference in profit or reputation towards their Persons or Fortunes.* For the vexations of sickness; the sweetness of life; the flattery hope; the commendation of friends; maketh men to depend upon Physicians with all their defects: But if a man seriously weigh the matter, these things rather redound to the imputation of Physicians, than their excusation: who should not for these prejudices cast away hope; but encrease their pains and diligence. For whosoever pleaseth to excite and awake his observation, and a little look about him, shall easily deprehend even from common and familiar examples, what a command and soveraignty the subtilty and sharpness of the understanding hath over the variety either of matter, or of the form of things. *Nothing is more variable than mens faces* and countenances; yet the memory retains the infinite distinctions of them.... *Nothing more variable than mans voice;* yet we can easily discover their differences in every particular person; . . . *Nothing more variable than articulate sounds* of words, yet men have found a way to reduce them to a few Letters of the Alphabet. And this is most certain, *that it is not the insufficiency, or incapacity of man's mind; but rather the remote standing, or placing of the object that breeds these Mazes, and Incomprehensions.* For as the sense afar off is full of mistaking; but within due distance errs not much; so it is in the understanding. *For men use commonly to take a prospect of Nature, as from some high Turret, and to view her afar off; and are too much taken up with generalities, whereas if they would vouchsafe to descend and approach nearer to particulars; and more exactly and considerately look into things themselves; there might be made a more true and profitable discovery and comprehension.* Now the remedy of this error *is not alone this, to quicken or strengthen the Organ, but withal to go nearer to the object:* And therefore there is no doubt but if Physicians, letting Generalities go for a while, and suspending their assent thereto, would make their approaches to Nature; they might become Masters of that Art, whereof the Poet speaks:
>
> *Et quoniam variant morbi, variabimus artes;*
> *Mille mali species, mille salutis erunt,*
>
> which they ought the rather to endeavour because the Philosophers themselves, upon the which Physicians, whether they be Methodists, or Chymists, do relye (*for Medicine not grounded upon Philosophy is a weak thing*) are indeed very slight and superficial. *Wherefore if* too wide Generalities, though true, have this defect, that they do not well bring men home to Action: certainly there is greater danger in those Generals, which are in themselves false, and instead of directing to truth, mislead the mind into the by-paths of Error.
>
> *Medicine, therefore* (as we have seen), hitherto hath been such, as hath been more professed, than laboured; and yet more laboured than advanced; seeing the pains bestowed thereon, hath been rather in circle, than in progression. *For I find much Iteration but small Addition in Writers of that Faculty.*

The skilled critic of this quotation will, I think, be ready to admit that if its medical facts and philosophy are written in the style of a lord chancellor, it is that which represents the thought and diction of a lord chancellor at his medical best; and that these display a soundness of judgment, and of appreciation of the indications of the most important historic landmarks of the art of healing, which has seldom been displayed from the English woolsack in discussions of medical matters. But while the perusal makes one wonder why the writer could not even comprehend, far less accept, the views of his own physician, William Harvey, on the subject of the circulation of the blood, it also makes one feel how important it is for the reader who is anxiously seeking for scientific truth not to permit the development of the semihypnotic influence of the seductive artificiality of the argumentative statements of a practised lawyer. Bacon's opinions on medicine and on magic were very much, indeed, in line with his exquisitely amateurish—not to say absolutely childish (or old womanish)—notions of the innumerable facts of *Natural History*, of which he compiled a scrapbook so very "prodigious." Accordingly, the fact that the "apostle of experimental philosophy" was "orthodox" in his opinions on matters magical conveys no surprise to the skilled scientist who has made himself acquainted with Bacon's most representative compositions.

That the existence of witchcraft was always recognized by the Church is, as I have already noted, a fact well known to every tyro in ecclesiastical history. That it received a new lease of existence at the time of the Reformation, and one which was drawn up in much more emphatic and explosive terms than was the old—and much more frequently, and more aggressively, produced in evidence than had been customary in the employment of the latter—is an important supplemental fact, which is also, I believe, less familiar to the average reader. The "devil and his angels," all manner of demons and witches included, were probably never more permanently and steadfastly fixed in the field of vision of the mind's eye of any sane individual, than in that of Martin Luther. John Calvin's estimate of the evidence and facts of such association was correspondingly appreciative, if somewhat less sonorous or explosive. Why it was that those opinions were so widely—almost universally—entertained is the question which, probably, seems quite unanswerable to the ordinary thinker of the twentieth century. In order to diminish the difficulty of recalling those now strange conceptions, I will endeavor to throw upon the mental screen of the reader—who has adopted my former suggestion of divesting his mind of modern scientific facts and inventions, and the theories and physical comforts and responsibilities therewith associated, some of the views of the general and special phenomena of this mysterious universe of ours which passed for profound—and even (in part) inspired—knowledge, during the long centuries which preceded the modern development of science and criticism. Preparatory to this attempt, I will recur for a moment to the subject of the author of the *Religio Medico;* and call the reader's attention to the first and second of a series of three items of Browne's text which were quoted by a self constituted "authority" on the occasion of the discussion of the erection of a tercentenary monument to his memory—for the special purpose of proving that writer's ignorance of scientific data, and his incapacity for logical reasoning. They are: (1) "Conceive the distinct number of three, not divided or separated by the intellect, but actually comprehended in its unity, and that is a perfect trinity"; and: (2) "In brief, conceive light invisible, and that is a spirit." The selection was a peculiarly happy one—for the purpose of a skilled advocate of the opposite view; indeed, the critic was wise, in a sense diametrically opposite to what he thought, in making it; for there are no more exquisitely appropriate texts in the whole of the famous *Religio*—to serve as starting points for a cursory examination of the attainments and specific opinions of the author, and of those which prevailed among the members of the learned oligarchy of his age. Accordingly, I propose to harp on each of these strings at some length. Before broaching the more elaborate details to which I hope to call the reader's attention afterward, I will just indicate at this stage that—with regard to the second of the given quotations—the mind of the author was saturated with the theology of St. Augustine, as every careful reader of Browne's works must have observed. And among the most important of the controversial writings of the greatest and most logical of the Latin Fathers were those directed against the Manichæan heresy. In that special theological atmosphere, the second person of the Trinity was frequently referred to as the *lux visibilis;* while the distinctively contrasted term and qualification of *lux invisibilis* indicated the obvious specific difference in the illuminating power of the third person of the Divine Triad, who was referred to thereby. A critic, who undertook to reverse the judgment of the learned of all the nations and languages of civilization—of more than two and a half centuries standing—regarding the merits of the text of the *Religio Medici,* should surely have made himself acquainted with such alphabetical items of theological information, before presuming to launch some clumsy—and preposterously misapplied—sarcasm at the diction and reasoning of one of the most deservedly famous of the English "classics."

The germs of witchcraft faith would almost appear to have invaded the organs of our first parents with the forbidden fruit of the tree of knowledge; for distinct traces of it have been found to exist among all primitive nations and races whose habits and beliefs have been studied with sufficient care. And I fully believe that the connection between witchcraft and medicine is probably almost as old as the very earliest developments of the former; and that it is, accordingly, incalculably older than the oldest regulated or "scientific" practice of the latter. The mysteries of disease, the complicated mechanisms of the various bodily organs, and the incomprehensible functions of the latter,—all lay entirely without the range of grasp of man's primitive intellectual conceptions, and of early scientific attainment; thus, accordingly, in such ages and conditions, no rational ways or means could possibly be devised for the treatment of the physical ills of the human frame—with the possible exception of the simplest forms of mechanical lesion. Precisely on that account, the victims of suffering—of mysterious internal, or loathsome external, disease—promptly turned to any, and every, supernatural agent which promised any hope of relief. The Egyptians of oldest civilization record, and their Hebrew slave guests after their exodus, had recourse to priestly advice and treatment. The facts of the imperfection of our present codes of medical and surgical therapeusis, and the deplorable consequences of the relegation of the largest series of opportunities for misapplication of the same to incompetent—and unscrupulously pretentious—hands, derived from the methods of appointment to leading positions in medical institutions which exist in certain, if not all, sections of the British Empire, are, to those who are seated behind the scenes, too clearly responsible for the germination and development of such fungous excrescences of the healing art as *hypnotism, faith healing*, and *Christian Science*. The demoralizing effect on a medical student in certain of the most productive of the centres of medical teaching, on learning soon after his initiation that the last and least desirable (often, indeed, the most dangerous to its hearer) of the qualifying reputations which a candidate for a most important public appointment can bear, is that of a mastery of the available attainments and accomplishments of his profession, and a conscientious desire to give the suffering members of the public the full benefit of the same,—is well known (within the inner circle of such institutions) to exercise, in cases far too many, an unhinging effect on his standard of rectitude and probity which is hardly ever neutralized or readjusted during his subsequent whole professional career. And the distribution of "public honors," and "scientific recognition, afterward, has often been such as to lead the cynical student of medicine of the past generation (which had the privilege of witnessing the rise of Eddyism) to express the caustic opinion that if he—or one of his dearest friends—were seriously ill, he would prefer the soothing attentions of the female apostle of Christian Science to the muscular mercies of Sir Timothy Teague MacBlunderboar Bulephant, or a course of prescriptive advice conveyed in the amateur esperanto of Sir Baboo Yahoo Malaprop!

The "medicine man," as wizard and miracle worker, has enjoyed a correspondingly conspicuous position among the native tribes of Africa, the aborigenes of remotest Australia, and the Indians of the western continent. Indeed, Cotton Mather, whose personality and pronouncements exerted an influence so powerful at a crucial period of the growth of the infant colonies of which he made himself the amateur Inquisitor, attributed the frequency of witchcraft contamination in New England, at the fateful season of its famous epidemic visitation, to the direct influence of evil spirits sent forth among the colonies by the Indian "pawwaws." In both the Old Testament and the New, the healing of the sick is nearly always attributed to supernatural influence. And the characteristic leaning of Oriental belief in that direction has been maintained even to our generation. The miraculous cures effected by Christ were aped by Apollonius of Tyana. It has been suggested that the Emperor Vespasian may have been a pupil of the latter; for when residing at Alexandria, he appears to have become transitorily endowed with corresponding powers: *Multa miracula evenere, quibus cœlestis favor, et quædam in imperatorem inclinatio numinum ostensa est.* The specialized professional methods of operation would appear, from what historic testimony we possess on the subject, to have been familiar to the populace of that then most cultured of civic communities; for we read that a blind man threw himself at his feet, imploring him to touch his dim orbs with the Imperial saliva; while another individual who was "lame of one hand" (*manu æger*) begged to be honored by the contact of his foot (*ut pede ac vestigo Cæsaris calcaretur*). Both afflicted individuals had been persuaded by the authority of Serapis that such were, respectively, the appropriate procedures for effecting the cures of their ailments. The Emperor, who was evidently pledged to the cult of popularity, consulted his own medical advisers, who made the very courtierlike response: *id fortasse curæ Diis, et divino ministerio Principis lectum.* Acting promptly on the suggestion, Vespasian spat upon one petitioner and kicked the other. Both were, of course, cured on the spot! The popular faith in the curative efficacy of touch was transmitted down through all the ages. It inspired the recourse of the physically afflicted to contact with the persons, the secretions, or the garments of holy persons during the lives of the latter: and with their sanctified relics after their death. It created the confidence in the curative efficacy of the touch of the hand of "the Lord's anointed"; and in ablutions in, or aspersions with, the waters of holy wells and streams.

The (now) startlingly emphatic views which were promulgated in 1684 by Increase Mather, the famous Boston pastor and president of Harvard College, in his *Remarkable Providences*, were reechoed from the old country with the cordially encouraging approval of Richard Baxter, the author of the celebrated classical contribution to theological literature which bears the soothing title of *The Saints Everlasting Rest!* And, although the fact is seldom recalled in this our electrical twentieth century, the power of that same "Prince of the air" was all but universally admitted by the bulk of the inhabitants of Christian—as well as of heathen—nations When the inspired philosophical pioneer of physical science, Benjamin Franklin, drew down the lightning from the thundercloud along his damp kite string on the bank of the Schuylkill, then, and not till then, was the throne of his aerial majesty ruinously overturned; and (the more intelligent portion, at least, of) Christendom emancipated from the terrors of his tyranny! To those of my readers, however, who hug themselves with the idea that all traces of that same influence belong to a now comparatively remote and irrevocable past, I would commend the enlightening—if not exactly edifying—perusal of the Reverend W. Scott's *Doctrine of Evil Spirits Proved* (London, 1853); and Dean Burgon's sonorous comment on the substitution of "epileptic" for "lunatic" (in Matt. xvii., 15), by the revisers of the authorized version of the gospels (*Quarterly Review*, January, 1882).

The pioneers of light and leading have always had their full share of persecution, in this as in all other departments of intellectual progress. In their respective endeavors to popularize the truth in this connection, Flade sacrificed his life, Cornelius Agrippa his liberty, Wier and Loos their prospects of worldly advancement, Bekker his position, and Thomasius his reputation and friends.

Reginald Scot's *Discovery of Witchcraft* (London, 1584) was consigned, by the hands of the common hangman, to the flames which would have been ungrudgingly applied to the author by the British Solomon, had a favorable opportunity presented itself. But as that pious and learned monarch could not catch the author, he had all the procurable copies of his book destroyed; and published under his own royal signature a "counterblast" to its influence, in the shape of a volume bearing the title of *Dæmonologie, in forme of a Dialogue;* which is included in the stately folio volume of his collected works that was brought out in 1616. The preface to this brochure informs the appreciative reader that the motive of the work is directed "against the damnable opinions of two principally in our age, whereof the one called *Scot,* an Englishman, is not ashamed in public print to deny that there can be such a thing as Witchcraft: and so maintaines the old errour of the Sadduces in denying of spirits; The other called *Wierus,* a German Physition, set out a publike Apologie for all these craft-folkes, whereby procuring for their impunitie, he plainely bewrayes himselfe to have bene one of that profession." The royal author's text is divided into three books, throughout which "*Philomathes* and *Epistemon* reason the matter." A short extract will give some idea of the value of the affirmations and negations therein displayed: "This reason then mooues me, that as he is that same diuell, and as crafty now as he was then, so he will not spare us perdy in these actions that I have spoken of, concerning the Witches persons: but further, Witches oft times confesse, not only his conueening in the Church with them, but his occupying of the Pulpit; Yea, their forme of adoration, to be the Kissing of his hinder parts: which though it seems ridiculous, yet may it likewise be trew, seeing we read that in *Calicute,* he appearing in form of a Goat-Bucke, hath publikely that vn-honest homage done vnto him, by euery one of the people: So ambitious is he, and greedy of honour (which procured his fall, that he will euen imitate God in that part, where it is said, that *Moyses* could see but the *hinder parts of God, for the brightnesse of his glory:* And yet that speech is spoken but *ἀνθρωποπάθεινα.*" The reliability of this unspeakable information is corroborated by an orthodox volume —perhaps the most instructive that has ever been published on the subject—which appeared in Milan in 1608. The second edition, which now lies before me, bears the following title: "COMPENDIUM MALEFICARUM, ex quo nefandissima in genus humanum opera venefica, ac ad illa vitanda remedia conspiciuntur. Per Fratrem Franciscum Mariam Guaccium Ord. S. Ambrosii ad Nemus Mediolani compilatum. In hac antem secunda editione ab eodem authore pulcherrimis doctrinis ditatum, exemplis auctum, & remediis locupletatum. His additus est Exorcismus potentissimus ad soluendum omne opus diabolicum; nec non modus curandi febricitantes, ad Dei gloriam, & hominum solatium. MEDIOLANI. Ex Collegii Ambrosiani Typographia. 1626." One of the very numerous wood cut illustrations of this enlightening volume exhibits a lady devotee proceeding to the nocturnal convention, riding astride a flying goat; and another depicts the central feature of the reception and initiation: "Tum candelis piceis oblatis, vel umbilico infantuli: ad signum homagii eum in podice osculantur."

And no seeker after historical fact and veracity should allow himself to be persuaded that the average English opinion of that date was more enlightened in connection with the subject of witchcraft than was that of Italy. The belief of the zealous Puritan in the literal infallibility of his authorized version of the Bible placed the reality beyond the range of interrogation, and its punishment by death a matter of pious Christian duty. The practices of those self taught apostles of reformed doctrine were, of course, copiously satirized by the doggerel poets of the period. One of these, for instance, refers to a random visit to a locality of which the denizens practised Puritanism of the most rigidly orthodox pattern:

Where I found a Puritane
Hanging of his cat on Monday
For killing of a mouse on Sunday.

Small, indeed, would be the chances of mercy for the accused witch who was unfortunate enough to be tried by a jury made up of such! And while the Puritan movement was at its height, many of them pretty surely were. The Pilgrim Fathers who colonized New England carried with them their modes of thought and canons of practice; the supernatural aspect of which even underwent highly expansive development from the influence of their new experiences and environments in a transplanted existence—in a vast continent, peopled by strangely different specimens of the human form, and suggestive of weird conceptions and reflections in the measureless solitudes of its forests, and by the margins of its immense lakes and rivers. They preserved them with the castiron conservatism of provincial life; and the blossoms which they bore are vividly depicted in Cotton Mather's *Wonders of the Invisible World,* and by the whole recorded history of the blood and fire crusade against witchcraft; of which the organization and administration were so largely due to the unsparing zeal of the Mathers, father and son.

For rather over a century and a half, England had (in the days of the author of the *Religio Medici*) been torn with the internal dissensions which resulted from the uncompromising antagonism of the leaders of religious thought; and these latter, it need hardly be said, missed no favoring opportunity of extending their own political as well as doctrinal influence. The ebullitionary explosions reached the critical point on one occasion with the execution of Charles I., and on a second with the expulsion of James II.; after which they became less violent. The succession of the stately and bloody tyranny of the Tudors, by the more tortuous and feeble methods of their unlucky Stuart successors, necessarily had its influence on the progress of social life and thought throughout the country.

The orphaned son of the murdered Queen of Scots grew up unmanly and untidy, and some of his personal habits must have repelled the tastes and rasped the feelings of even the most unkempt of contemporary London courtiers. His political morality was summed up in his oft quoted motto, *Qui nescit dissimulare, nescit regnare;* while his personal "propriety" may be estimated from the record that he never washed any part of his body—not even his fingers, which he wiped on a damp napkin after eating. The needy and greedy Scotch clients who pursued the footsteps of their newly elected royal patron were said to form a continuous line from Edinburgh to London—where they, as a natural sequence, immediately proceeded to occupy all available salaried positions. No Caledonian immigrant imported anything but his *kilt* and his *"youk."* The prominence of the latter "in the public eye" of the period may be estimated from the lines of one of the surviving popular ballads, of which the following are the opening stanzas:

The Youk is a gentle and lovely Diseese,
Fit Ladies and Lords and Princes to pleese,
For it finds rare diversion for sich idlers as these,
Whilk nae body can deny.

In Youk's commendation, a Monarch I wot,
Hath made great Encomiums, and learnedly wrot,
I think it was James the illustrious Scot,
Whilk nae body can deny.

For aen A . . . that was scabby, he said was a thing,
We ten lang and strang Nails, only fit for a King,
But for the best Subject too precious a thing,
Whilk nae body can deny.

This disgustingly unkempt monarch was—openly and demonstratively—devoted to his handsome young masculine favorites, whom he habitually embraced in public, with copious osculation and beslavering. The knowledge of his Caledonian Majesty's continuous culture of this variety of affection prevents any surprise at the item of gossip recorded by Sir Edward Peyton, who tells his readers that "one Mr. Beely a Dane, . . . in great secrecie, discovered to me, he was natural father of King Charles." And we find that the paternity of the second Charles has been discussed in correspondingly dubious terms. The relevancy of the discussion of such items of regal morality in the present connection may be challenged—and at this stage will probably be denied by many of my readers. But it is the really great influence of such practices and environments on the moral and religious opinions of the multitude that I would here specially emphasize. The effect of such an ethical atmosphere as that existing among and around the privileged representatives of absolute authority, in presence of the hard and almost hopeless lives of the struggling poor, not only furnished the Puritan religionists and revolutionists with their most penetrating and effective weapons, but also afforded the most unanswerable arguments in favor of the existence of an evil power, the representative of which so evidently exercised an almost uncontrolled influence. When the late "sage of Chelsea" found himself unable to syllogize into silence a trans-Atlantic visitor who was aggressively sonorous in his expressions of disbelief in the existence of a personal devil, he brought him in the evening to the House of Commons, where a tangled and hard fought debate was carried out for a period of several hours, and with peculiarly acrimonious vehemence. The visitors made no running comment; but, as they descended the stairs in silence, Carlyle caught his friend by the elbow and asked, in a loud and very significantly toned whisper: "D'ye believe in the devil, noo?" And his American companion is said to have remained silent—for the first time, after a reference to the authenticity of his sable majesty!

The belief in witchcraft—its cosmopolitan practice, its mystical ceremonies, its uncanny powers, and its weird accompaniments—appears to have formed, in some shape, an article of the primitive faith of every nation and community, at every period of the world's history. Indeed it would seem to have been as widely dispersed as the human race itself. It still claims the awe inspiring authority of the sacred text; and I have good reason for believing that—strange as it may appear to the over-educated and highly enlightened of my readers—it has not yet quite disappeared from the central representative communities of the most advanced modern civilization; not even from those of the practical and critical American republic! Specialists in this department of the history of religious and social progress tell us that the Scriptural text which, with a single exception, has led to the greatest amount of destruction of human life, and all the associated horrors of barbarous tortures, and persecution with all its conceivable miseries, is to be found in the divine mandate: "Thou shalt not suffer a witch to live." It is somewhat painful to be told now that many of the most reliable of the "higher" critics of the present day regard the word *witch* as a mistranslation, and confidently point to the Septuagint version in corroboration of this view. Witchcraft was always recognized by the Church; but the belief therein became far more prolific of results when the smouldering embers of theological zeal had been blown into a white heat by the violent currents of the Reformation movement. Witchcraft and demoniacal possession were specially favored tenets of Martin Luther and of John Calvin, and the general belief—or assertion, at least—of the leaders of the various sects that their opponents were the favored followers of his sable majesty gave those items of belief a more impressive semblance of substantiality than they had previously possessed. It was also decided by some of the political and philosophical leaders of thought in that age to be *a very safe belief to be held by the common people.*

Premonitory warnings of the larger demoniacal developments of the near future had arisen in the latter part of the fifteenth century. They were sufficiently demonstrative to elicit the interference of the ecclesiastical authorities, and Pope Innocent VIII. issued a bull in which he called upon the Catholic hierarchy of Germany to aid the Inquisitors in the endeavor to antisepticize the mental soil to the requisite degree of resistance to the germs of the prevailing plague of witchcraft, the (victims or) votaries of which were emphatically described as volunteers in the service of Satan, and revellers in the blackest crimes. The first (dated) edition of the (now blood curdling) *Malleus malleficarum*—the authoritative manual of instructions for dealing with the persons and conditions of the accused and suspected—is of 1480; but it is said to have been printed some years before. The pages of many of the early editions of Luther's German Bible swarm with representations of demons, imps, etc.—with their votaries and victims; an auxiliary item of popular education which could not fail to impress such *revealed* facts of the unseen world of mystery indelibly, on the (early) receptive imaginations of their Protestant readers. And the energetic reformer himself not only recognized the supraterrestrial presence of such malignant spiritual entities, but even peopled the waters under the earth—at least some of the local reservoirs—with tenants of that class. He declared that the throwing of a stone into a certain pond of his native territory would inevitably be followed by a dreadful storm—the result of disturbing the devils who were therein imprisoned! Johann Eck, the theological gladiator who was put up by the Church authorities to confute Luther in public disputation, issued an edition of the then approximately infallible *Physica* of Aristotle (Augsburg, 1519), in which the wood cut that illustrates the earth's investing atmosphere vividly depicts, among the cloud strata of mid air, the physiognomical types of the devils who had supreme control in that pneumatic domain. The awe inspiring folio of the famous Jesuit, Martin Delrio (*Disquisitiones magicæ*, Liége, 1599-1600) remained throughout the seventeenth century the great orthodox authority on witchcraft, demoniacal possession, and the manifold phenomena produced by the exercise of the malignant influence of the "prince of the powers of the air"; and would appear to have been treated with almost equal respect by Protestants and Catholics.

In the times and localities in which those supernatural powers of healing existed, and were busily practised, there were found to coexist the antagonistic agents of evil—the latter, as a general rule, highly predominating. Amulets, incantations, charms, and philters were, each and all, outward and visible signs of the inward and spiritual belief in the powers of certain supernatural agents to effect, by means of chosen (appropriate) weapons, specific modifications of the parts and functions of the human economy which were so utterly unattainable by any of the ordinary physical methods. In the Germany of the Renaissance and post-Renaissance periods, this misty atmosphere of supernatural ideas was so all pervading, that, even in the armies on active service, the belief prevailed that muskets might be so efficiently charmed as to refuse to be fired; and that a cannon ball was obliged to recoil when it collided with a specially efficacious specimen. Accordingly, we need feel no further surprise on learning that during the whole period of the Thirty Years' War nearly everyone of the officers wore his amulet when on duty—as surely as he did his sword.

(*To be continued.*)

Correspondence.

LETTER FROM EDINBURGH.

The Edinburgh Obstetrical Society.—Professor Hunter Stewart on Tuberculosis.

Edinburgh, *December 1, 1910.*

Dr. F. W. N. Haultain delivered his presidential address to the Edinburgh Obstetrical Society on November 9th. He reviewed the important part Edinburgh had played in the development of gynæcology, mentioning the names of Simpson, Lister, Keith, and Tait. He traced the development of ovariotomy, which he described as the *doyen* of abdominal surgery. In spite, however, of improvements in methods and in spite of the use of antiseptics, the mortality from puerperal causes was as high in Scotland as it was fifty years ago. England and Wales were in the same position, while all other European countries showed a marked decrease. He could account for this only by assuming an increase of germs in the surroundings, the result of centralization in cities and overcrowding. This was in keeping with the marked increase in appendicitis, septic pneumonias, and similar affections. He looked into the future and expected the development of a new specialist, the abdominal surgeon.

On November 21st Dr. C. Hunter Stewart, professor of public health at Edinburgh University, read to the Royal Society of Edinburgh a valuable communication entitled The Sex and Age Incidence of Mortality from Pulmonary Tuberculosis in Scotland and in Its Groups of Registration Districts Since 1861. The paper was listened to by a large audience, among whom were many prominent medical men. Professor Stewart referred at the outset to the investigation made by Dr. Tatham of the statistics of the mortality from pulmonary tuberculosis in England and Wales, the results of which had been carefully tabulated and discussed. These results were of great epidemiological value, showing as they did, not only the course of the mortality and its sex and age incidence, but also the effect of locality, urban and rural, on this mortality. In Professor Stewart's paper the results were given of an investigation on somewhat similar lines of the statistics of the mortality from tuberculosis of the lungs in Scotland during the period 1861-1907. In his first table he showed the mortality from tuberculosis of the lungs per 10,000 living, at all ages, of males and females in Scotland, England and Wales, and Ireland, and the general results of the statistical inquiry were summarized. In this summary it was noted: 1. That in the quinquennium 1861-'65 the mortality from tuberculosis of the lungs at all ages was practically the same in Scotland and in England and Wales in both sexes, the mortality among females being greater than among males. 2. That between 1861-'70 and 1906-'7 there had been a smaller reduction of the mortality in Scotland than in England and Wales, and this was almost entirely due to the much smaller reduction in female mortality, the reduction in male mortality being practically the same in the three countries. 3. That while in England and Wales the female rate fell below the male rate in 1866-'70 and had continued so to an increasing degree, this did not occur in Scotland till 1891-'95. 4. That while in England and Wales the reduction had been greater among females than among males from fifteen to twenty years onward, in Scotland this had been the case only from thirty-five to forty-five years onward. 5. That in the rural area of Scotland the percentage reduction of mortality at age periods forty-five to fifty years had been less in both sexes than in the urban area, and that up to twenty-five years of age there was a smaller reduction in female relatively to male mortality in the rural than in the urban area. 6. That, contrasting the urban and rural areas of Scotland with the somewhat similar areas in England and Wales since 1891-1900, the female rate in the urban area was much higher than that in England and Wales, while the male rate was now lower. The rural female rate was also higher, and, as in England and Wales, it was lower than the male rate. In both urban and rural areas in Scotland the male and female rates up to forty-five years were greater than those in the corresponding areas of England and Wales. 7. That in certain towns and groups of towns in Scotland the female rate at all ages exceeded the male rate, and in others was the same or less. The cause or causes of the greater mortality from tuberculosis of the lungs among females in Scotland as compared with that in England and Wales must have operated during more than forty years both in urban and in rural areas. The reduction in Scotland at all ages had been practically the same among males and females until 1901-'05, since when it had been the same in both sexes. In England and Wales, while the reduction in female mortality at all ages had been much greater than in male mortality, the reduction among females had been the same as or greater than among males from age period fifteen to twenty years onward. Between the ages of five and twenty years the phthisis mortality both in England and in Scotland, alike in urban and rural districts, had always been greater than among males. It seemed that some influence had been at work in Scotland which had retarded the reduction of female mortality at age period fifteen to twenty to thirty to thirty-five years as compared with that among females in England and Wales and among males in both countries.

In the ætiology of tuberculosis of the lungs two factors were generally recognized, the bacillus and the condition of the body into which it entered, the relative importance of these being estimated differently by different authorities. The cause of the greater mortality among females in Scotland than in England and Wales might be either a greater exposure to infection or diminished resisting power among the female population of Scotland, especially at the early age periods, or to both of these. Any light on this point was most important in connection with the success of preventive measures. Fortunately, many measures, such as improved housing, improved conditions in factories and workshops, school hygiene, etc., tended both to lessen risk of infection and to increase the bodily resistance. If the chief cause was greater exposure to infection, measures must be directed specially against the bacillus; if diminished resistance of the body was also of great importance, success would lie to a great extent in measures for securing general conditions of healthy living.

Lowered resistance of the tissues, produced by exhausting work and insufficient nutrition, was recognized as a factor in tuberculosis of the lungs. Setting on one side the dangers to health in special industries, the exhaustion produced in young females by hard physical exertion would tend to accentuate that predisposition to tuberculosis of the lungs observed in them between five and twenty years of age as compared with males. There was and had been for the last forty years a much smaller relative number of the female population in Scotland engaged in indoor domestic service than in England and Wales. On an average during the forty years, in England and Wales more than thirty-five per cent. and in Scotland twenty-seven per cent. of the occupied females above ten years were engaged in indoor domestic service. But as regarded the female domestic servants themselves, at least many of them, it certainly insured better feeding and housing than they would have had in their own homes. About forty-six per cent. more females between ten and twenty years of age were engaged in domestic service in England and Wales than in Scotland, and hence had to this extent less severe labor and the better conditions as regarded food and housing above referred to, at the time of greater predisposition to pulmonary tuberculosis as compared with males.

Since 1871, on an average, 6.2 per cent. of the occupied females above ten years were engaged as agricultural laborers in Scotland, while in England and Wales only 0.9 per cent. were thus employed. There were eighty-seven per cent. more females thus employed at the age period ten to twenty, and in the past at all events the sleeping accommodations had been insufficient as regarded both space and ventilation. In the rural districts of Scotland, therefore, the female population above ten years of age had been much more engaged in the hard work of agricultural labor. The chief textile industry in Scotland was jute manufacture; in England and Wales it was cotton manufacture. There was a great difference between the countries in the relative number of females employed in these industries. In Scotland since 1871 on an average nearly twenty-six per cent. of the occupied females above ten years of age had been engaged in textile manufacture, while in England and Wales fewer than seventeen per cent. were so employed; thirty-three per cent. fewer females from ten to twenty years of age were engaged in it in England and Wales than in Scotland.

The work of dressmaking, tailoring, staymaking, millinery, etc., was on an average of a lighter nature than either agricultural or textile labor. In Scotland thirteen per cent. and in England and Wales above eighteen per cent. of the occupied females above ten years of age were so employed. Nearly forty per cent. more females from ten to twenty years of age were employed in this industry in England and Wales than in Scotland. Thus there was and had been in Scotland since 1871 a markedly smaller number of the female population between ten and twenty years engaged in the relatively light occupations of indoor domestic service and dress manufacture, and a markedly large number in the harder work of agricultural and textile industries, than in England. Any diminution in the bodily resistance produced by these conditions would probably be chiefly operative on the mortality rates between fifteen and thirty-five years, and it was between these age periods that the reduction in female mortality was so markedly smaller in Scotland.

There seemed sufficient accordance to indicate that occupation was exerting an influence on the female mortality in Scotland as compared with England, and in the Scottish towns of greater as compared with those of lesser industrial occupation among females. In concluding, Dr. Stewart compared the mortality from tuberculosis with that from all other diseases, and showed that females were affected in a similar way. The question as to whether this was due to lowered bodily resistance, brought about by conditions peculiar to Scotland, was one which he promised to discuss in a second paper. An interesting discussion followed, and Dr. Stewart was accorded a vote of thanks.

Therapeutical Notes.

The Therapeutics of Gout.—In an address delivered at a meeting of the Harvey Society of New York last April and published in the *American Journal of the Medical Sciences* for November, 1910, entitled Uric Acid in Gout, the author, A. Magnus-Levy, discussed the therapeutics of gout. Touching on the behavior of the two drugs which had been found most efficacious in the paroxysm, colchicum and salicylic acid, he observed that salicylates in sufficient doses increased the output of uric acid materially, by seven grains and upward daily, but the action does not persist for more than a few days when the effect disappears. Colchicum produced no change, or if it did, it diminished the quantity of uric acid elimination. The effect of colchicum was stated to be more rapid and more intense than that of sodium salicylate. How it acted the author did not state, though he observed it might inhibit the process of solution and thus put an end to the inflammation and to the paroxysm. If this conception were right colchicum would be only a palliative for the attack, while the salicylates, in spite of their slower action, would be the preferable remedy. Of all remedies deemed useful in chronic gout, alkalies had for centuries been applied more than all others. One theory favoring their use was that they dissolved the concretions of urates within the body, a theory entirely refuted by modern research. The other theory had to do with the supposed quality of the alkalies of facilitating the output of uric acid, but experiments had not borne this out. He cited Roberts, who asserted that in a long experience he had never seen any distinct improvement even after administering alkalies for many years. What remedy can be substituted for alkalies? asked the author, and he then spoke of Falkenstein's resort to hydrochloric acid. Falkenstein reported that he got rid of his pains by the use of hydrochloric acid without having changed his mode of living, his diet, or his habits, and that he had also obtained good results in many patients. Other physicians, Dr. Magnus-Levy said, had been less successful. Experiments with radioemanations were cited in the paper. It was noted that physicians were inclined at present to ascribe the undoubted efficiency of mineral waters not to the content of salts, but to the emanations of radioactive substances. Gudzent had observed that radioemanation was able to destroy uric acid. Since the emanation left the body rapidly Löwenthal constructed a respiration chamber, in which the amount of emanation was kept at a high level. Thus, the quantity of radioemanation from men rose to 150,000 units. Preliminary experiments were carried out last winter by Löwenthal and Gudzent in the clinic of Professor His, but the results had not yet been published in detail, and it was therefore difficult to form a judgment. In healthy persons the output of uric acid was materially increased, but gouty patients behaved differently.

The Reduction of Blood Pressure in Arteriosclerosis.—In the treatment of high blood pressure in arterial disease, Rudolph (*British Medical Journal*, November 26, 1910) considers the spasm to be in the great majority of cases of toxic origin, and that attention should be directed to the lessening of this toxæmia, which is generally recognized to be due to nitrogenous bodies. In the intestinal tract certain bodies, technically known as the aromatic series, are produced by the decomposition of proteid materials; and these being absorbed may, either by direct action on the vessels or in some less direct way, produce vasoconstriction. These poisons must first pass through the liver, and, if this organ be active, may be destroyed there and do no harm. It seems to be especially the proteid of meat and eggs that produces most toxins. If the toxins once reach the blood they are chiefly got rid of by the kidneys. Hence it is that Huchard puts as the second most important factor in the production of the presclerotic stage of arteriosclerosis insufficiency of hepatic and renal functions.

If the patient shows a family tendency to arterial disease the author advises putting him chiefly on a lactovegetarian diet, cutting out excessive smoking and the use of alcohol, and the administration of a saline every morning, with an occasional mercurial purge. If such a régime be not sufficient regular small doses of potassium iodide may help very much. Diuretics may be useful, especially theobromine.

With regard to the use of vasodilators Dr. Rudolph says they usually act even in profound cases of arteriosclerosis and it has been shown that their action is more prolonged here than in normal vessels. He classifies them in the following order as regards their speed of action and associated evanescence of effect: Amyl nitrite, nitroglycerin, spirit of nitrous ether, sodium nitrite, erythrol nitrate, and mannitol nitrate. The effect of the last named has been found to be more prolonged than any of the others.

He sounds a warning note regarding the quality of the spirit of nitrous ether as dispensed in Canada. There is, he says, no standard for strength in the British or Canadian pharmacopœias, but in the American it must contain 4 per cent. of the ethyl nitrite when freshly prepared. When made according to the directions of the British Pharmacopœia it should contain from 2.75 to 1.75 per cent. Sodium nitrite also rapidly oxidizes and thus loses its action, so should be freshly prepared. Physicians probably often fail to get the action looked for with these drugs on account of these depreciations.

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THE NAVAL MEDICAL SERVICE.

In his report for the fiscal year 1910 Surgeon General Stokes, of the navy, dwells very properly upon some of the needs of the Medical Corps. In the first place, there is the continued scarcity of men. At the beginning of the year there were still fifty-one vacancies, and at the end of the year the number had been reduced only to forty-five. The deficiency is attributed largely to a departmental order to the effect that all persons admitted into the corps should enter it as acting assistant surgeons, whose compensation is but about half the pay and allowances provided for men who enter the army as first lieutenants in the Medical Reserve Corps. "The failure of Congress to enact any one of the four measures which provided for equalizing the compensation of acting assistant and assistant surgeons," says the surgeon general, "made it imperative for the bureau to recommend the direct appointment of assistant surgeons from civil life," with the consequent elimination of the prescribed probationary period and the postponement of instruction in the Naval Medical School to a period following appointment to the regular corps. Moreover, the numerical deficiency of medical officers has worked undeserved delay in promotion, because it has been impossible to relieve from active duty at sea or on a foreign station those whose examination for promotion was due. The same paucity of medical officers has hampered the attendance on the spring course of instruction at the Naval Medical School and interfered seriously with the granting of leave of absence.

The surgeon general urges the establishment of a naval medical reserve corps, adding to the arguments previously employed by the bureau in favor of such a move that of the benefit to the Army Medical Corps which has resulted from the action of the distinguished physicians who head the Army Medical Reserve Corps in inducing desirable candidates to present themselves for admission into the regular corps to the extent of increasing their number from ten to twenty-nine in the course of a single year. He urges also the enforcement of venereal prophylaxis as practised in the Asiatic and Atlantic fleets to the entire service afloat and ashore; the substitution of more recreative and continuous athletic exercises for the present annual physical test of fitness for service, with the adoption of the Swedish system of physical training for the younger men; the provision of adequate sanitary facilities for the men on ships in dry docks; the substitution of a readily washable texture and color for all service uniforms of officers and men; the extension of protective inoculation against typhoid fever to the entire personnel under the age of fifty years; the requirement of statements from recruits as to their having had appendicular inflammation or incontinence of urine and as to their family history with regard to nervous or mental disease; and appropriations for the building of two suitable hospital ships. There can be no doubt that these recommendations ought to be adopted, and the surgeon general makes others of which the same may be said.

UNLICENSED PRACTITIONERS IN GERMANY.

The first step toward placing quackery on a legal basis is about to be undertaken in Germany, where a law to this effect has been accepted by the Federal Council and is about to be discussed by the Reichstag. According to this bill, the quack will be regarded as a trader (Gewerbetreibender) who will be compelled to submit to certain regulations. Before an unlicensed practitioner is permitted to begin business, he will have to report his intention in writing to the authorities, adding full particulars regarding his educational acquirements. If at any time it is thought necessary, he will be required to submit details concerning his life, his methods of treatment, and other data of this kind. He will have to keep books of all transactions, which will be open to inspection by the authorities. On the other hand, he will not be allowed to make use as an advertisement of the fact that he has obtained permission to practise.

The quack will be forbiden to treat patients by letter, to employ mystic practices or hypnotism, to use other than purely local anæsthetics, or to make hypodermic or intravenous injections, except in the case of local anæsthetics. The treatment of infectious diseases, of syphilis and other venereal affections, and of cancer is prohibited, and the Federal Council will be empowered to add at its discretion to this list of forbidden fields of activity. In addition, the local authorities will be able to put an end to the business of any quack as soon as they have reason to believe that his practices are dangerous to the health of the community or of the animals intrusted to his tender mercies, for the provisions of this bill also extend to the treatment of animals. The unlicensed practitioner will not be allowed to supply his clients with any remedies or appliances or even to direct them to purchase the same in any particular store (it must not be forgotten that the German physician is not allowed to dispense his own medicines).

To the Federal Council, in which will be vested the power to enforce the provisions of this bill, will be attached an advisory board consisting of members chosen by the Chancellor from among the members of the Imperial Board of Health and representing the legal, medical, pharmaceutical, and veterinary professions. This board will also act as a court of appeal in case any unlicensed practitioner or vendor of secret remedies complains of its decision. An important provision, not contained in the original draft of the bill, which appeared two years and a half ago, is that the Federal Council may prohibit the sale of any infant food or other nutrient preparation if its use is likely to prove injurious to health or if it is marketed in such a way as to deceive the public. This also applies to the sale of means to prevent conception or induce abortion. The quack is forbidden to make any false statements regarding the nature and method of his treatment of man or beast, or concerning cures, etc., effected by his agency, and the penalty will be one year's imprisonment and a fine of $1,250, or either alone. Imprisonment up to six months and a fine of $375, or either penalty, will be meted out to any person who advertises or publicly recommends any appliances or methods for the treatment of venereal affections, to remove impotence, cause abortion, prevent conception, or increase sexual appetite. The same punishment will be applied if the principal factor, the constituents of the remedy, and the mode of treatment are not mentioned or are imperfectly given in the advertisement.

This law is also intended to deal on a broad basis with the sale of secret remedies. In the first place, the existing federal regulations will not be affected, but the foundation upon which the whole trade in secret remedies rests is to be taken from under the manufacturers' feet. In other words, the benefits of extensive and persuasive advertisement will be completely closed to the trader in this class of preparations. It will be forbidden to advertise or to make in any form any public statements regarding the "special properties" of a preparation, to make use of testimonials, to allude to alleged cures effected by the use of the remedy, or to use any similar expressions or statements. It will be a punishable offense to omit in any advertisement a full statement concerning the exact ingredients and the weight of each contained in the preparation.

It is interesting to note that the federal government, in the introduction to the bill, lays stress upon the fact that a total prohibition of unqualified practice would, in its opinion, only prejudice the aim in view. The quack prospers by the fact that he conducts his business with secrecy, which enhances his prestige in the eyes of the people. "In countries in which practice by unqualified persons is forbidden the conditions are not materially better than in Germany." The principal factor in this bill is the power given to the Federal Council to prohibit at its discretion and by the advice of a commission of experts the sale of any preparation or appliance likely to prove detrimental to the public health or intended to defraud, and also to restrict at any time the field of activity of the quack by forbidding him to treat certain affections in man or beast. It will be interesting to follow the attitude adopted by the representatives of the people at the discussion on this social measure.

"606" IN NEUROLOGY.

The active, almost feverish interest awakened by the new Ehrlich-Hata preparation in the struggle for the conquest of one of mankind's most insidious enemies—syphilis— is of special moment to the student of diseases of the nervous system. Comparative neurology and psychiatry teach us that the gains of civilization have been obtained largely at the expense of the nervous system. The struggle for existence under modern industrial conditions imposes a heavy burden on the central nervous system, and if the extra stress of syphilitic infection is added the consequences are usually disastrous. Meningomyelitis, gummata, tabes, and paresis are among the gravest of these results, and with the hopes that this new remedy have awakened for the successful combat of syphilis in general it is of paramount interest to see where the nervous system stands in this therapeutic onslaught.

Though the time is all too brief to permit definite conclusions to be stated; still, enough experience has been gathered to indicate that some good results may be hoped for, and also that certain dangers exist to which attention should be directed.

In that most hopeless of syphilitic after effects in the central nervous system, general paresis, the treatment by "606" offers us as yet little hope. On the contrary, in true paresis it would appear that its use is fraught with considerable danger, for sudden death has been the outcome in a sufficient number of cases to dampen the most enthusiastic believer in the specificity of the new remedy. Ehrlich himself has raised this warning note, and has expressed the belief that his remedy must be used with great caution in the treatment of those disorders of the central nervous system in which advanced degenerative changes have taken place. But let it not be forgotten that the diagnostic difficulties in separating paresis from actual brain syphilis are great in a certain percentage of cases. This demands, then, a more than usual critique in determining the diagnosis, for which the criteria of Plaut should be brought into the foreground. Certain investigators, among whom may be reckoned Frenkel-Heiden, are not prepared to accept Ehrlich's dictum without further experience. It is important, however, that this danger signal be borne in mind, and in any proposed treatment of paresis by "606" the exact conditions should be made known to the persons concerned. The tabes question stands in somewhat the same condition, although here it would appear that better results have been obtained, especially in the relief of the lancinating pains. No case of well advanced tabes has been reported as cured, although certain ameliorations are noted. Inasmuch as many procedures have produced even better results, though temporarily, the reports concerning "606" in tabes require careful consideration.

In certain milder syphilitic invasions of the central nervous system the outlook is more encouraging. Spinal and brain gummata have certainly been improved, cerebrospinal syphilis with eye palsies, ptosis, paraplegias, etc., have been greatly ameliorated; syphilitic meningomyelitis has shown results which inunction and salicylate injections have not accomplished; syphilitic epilepsies have cleared up in a striking manner; and some syphilitic sciaticas have been more rapidly ameliorated than when treated by other methods. While again noting that the treatment has still been too little studied, so far as the central nervous system is concerned, yet in the main we seem justified in concluding that in "606" we have a useful remedy in attacking those disorders of the central nervous system of syphilitic origin in which advanced degeneration has not taken place. What effect the remedy will be shown to have, when used in the early treatment of syphilis, in preventing the development of tabes and general paresis only time can tell; but if the general principle of the treatment, the sudden killing off of all the arsenic attackable strains of spirochætæ, proves to be well founded, then a great boon has been conferred upon mankind.

SOME DIETARY POSSIBILITIES.

In recent years very much has been accomplished toward placing the questions of nutrition and dietetics upon a scientific foundation. The progress made, however, has been very largely in the field of dynamics, the relation between the caloric requirements of the body and the dynamic values of all manner of foodstuffs having been worked out with great accuracy. While the chemical differences of even very closely allied substances, such, for instance, as the albumins, have been emphasized by recent studies, the recognition of such differences has had practically no bearing upon the question of dietetics, which is still viewed from an almost exclusively empirical standpoint. Facts which suggest the possibilities which an accurate knowledge of this subject might offer, as shown by the profound physiological variations due to apparently trivial chemical differences, are found in the influence of an oatmeal diet, as contrasted with other carbohydrate diet, in diabetes, and the occurrence of idiosyncrasies toward certain common articles of diet, such as egg albumin, etc., while the specific effects of food have been studied and utilized in the breeding of lower animals, the fertility, quality of milk, meat, etc., being varied at will.

An interesting series of observations has been made by Dr. Reid Hunt, of the Public Health and Marine Hospital Service, with the aim of demonstrating to what degree certain physiological features could be varied in animals by simply changing the diet. The experiments were largely carried out with mice, and the factor which was investigated with the most striking results was the resistance to acetonitrile. This poison was chosen because it was believed that its action was due to the formation of hydrocyanic acid through the agency of certain oxidizing processes, and that the changes in metabolism which could influence the degree of this oxidation might furnish a very fair index of what could be accomplished in metabolic processes by simple changes in diet. In these experiments it was found that the resistance of mice to acetonitrile could be increased forty fold from the minimum by such changes. In certain instances it seemed likely that the effect was brought about by the influence of the diet upon the thyreoid gland, while in others the change was more obscure. Other animals and other poisons were also investigated, with similar if less striking results. While these studies may have no direct practical bearing upon the science of dietetics as applied to human beings, they are at least very suggestive of what might be accomplished by the application of such scientific methods to problems concerning man and his food in health and disease. It is to be hoped that the time is not far distant when we shall acquire as definite knowledge of the specific effect of foodstuffs as we have of their dynamic value.

DR. WEIR'S JUBILEE.

On Saturday, December 10th, a dinner was given in the University Club, New York, in recognition of Dr. Robert F. Weir's half century of professional work. Though it is a little more than fifty years since he took his medical degree and entered upon a career that has ever since been active and highly creditable, perhaps the occasion may properly be spoken of as Dr. Weir's jubilee. Dr. Robert Abbe presided, and speeches appreciative of Dr. Weir's sterling scientific and personal qualities were made by Dr. Maurice H. Richardson, of Boston, Dr. William L. Rodman, of Philadelphia, and Dr. William S. Halsted, of Baltimore. In the course of the proceedings a silver cup was presented to Dr. Weir. A notable feature of the gathering was the presence of a large proportion of men who had served as house surgeon under Dr. Weir.

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News Items.

Licenses to Practice Medicine in the State of Minnesota.—At the October examination licenses to practice medicine in the State of Minnesota were granted to seventeen candidates by examination, and to eleven by reciprocity.

The West Philadelphia Medical Association.—At the annual meeting of the association, held on December 6th, the following officers were elected for the ensuing year: President, Dr. H. L. Lutz; vice-president, Dr. C. P. Pike; corresponding secretary, Dr. H. G. Munson; financial secretary, Dr. W. M. Miller; treasurer, Dr. E. L. Graf.

The Philadelphia Medical Examiners' Association held its annual banquet and election on the evening of December 6th. Dr. Melvin M. Franklin was the guest of honor and delivered an address. The officers elected are: President, Dr. A. T. Gaillard; vice-president, Dr. F. S. Ferris; secretary, Dr. J. D. Farrar; treasurer, Dr. George D. Morton.

The Medical Society of the Borough of the Bronx held a stated meeting on Wednesday evening, December 14th. Dr. Charles Gilmore Kerley read a paper entitled Acute Infections of the Upper Respiratory Tract in Children. Dr. John E. Virden read a paper on the General Practitioner as an Ophthalmologist. Several new members were received into the society, and officers for 1911 were elected.

The Medical Club, of Portland, Me., held its thirty-fourth annual meeting on the evening of December 1st. Dr. George B. Swasey, the retiring president, delivered an address, and Major W. W. Reno, Medical Corps, U. S. Army, who is stationed at Fort Williams, also addressed the meeting. Officers for 1911 were elected as follows: President, Dr. A. H. Weeks; first vice-president, Dr. Daniel Driscoll; second vice-president, Dr. H. A. Pingree; secretary-treasurer, Dr. H. J. Everett; board of censors, Dr. B. F. Dunn, Dr. S. E. Fisher, and Dr. T. J. Burrage.

City of Philadelphia Honors Dr. Baekeland.—The city of Philadelphia, on the recommendation of the Franklin Institute, has awarded the John Scott Legacy Premium and Medal to Dr. L. H. Baekeland, of Yonkers, N. Y., for his invention of Bakelite, in accordance with the report of the institution's Committee on Science and Arts, adopted May 4, 1910. The award was made on November 9, 1910.

The Saline County, Neb., Medical Society held its annual meeting in Crete on December 8th and elected the following officers for the ensuing year: President, Dr. H. W. Quirk, of Crete; vice-president, Dr. Henry Hein, of Wilber; secretary and treasurer, Dr. P. F. Dodson, of Wilberg; delegates to the meeting of the State Medical Society, Dr. F. O. Stejaskal, of Crete, and Dr. U. S. Warder, of Friend.

The Birth Rate in New York State during the month of October, 1910, was lower than during the same period in 1909, the 17,000 births which were reported being hardly up to the average. The decrease is mostly in the rural districts, as the city birth rate has been well maintained. The birth rate for the month was 22.6, in contrast with that of October, 1909, which was nearly 25.0 in the urban population, and 20.4 in the rural.

A Portrait of Dr. Koch Presented to the Academy of Medicine.—At a stated meeting of the New York Academy of Medicine, held on Thursday evening, December 15th, a portrait of the late Dr. Robert Koch was presented to the academy, the presentation being made by Dr. S. Adolphus Knopf. A brief memorial address on the late Dr. Koch, who was an honorary fellow of the academy, was delivered by the president, Dr. John A. Wyeth.

The Dedication of the New Skin and Cancer Hospital, St. Louis.—The board of directors of the Barnard Free Skin and Cancer Hospital (St. Louis Skin and Cancer Hospital) announce the completion of the new hospital, and have issued invitations to the medical profession to inspect the new building, prior to its occupancy, on Tuesday, December 20th, from four to six o'clock. The formal dedicatory exercises will be held at three o'clock.

The Triprofessional Medical Society, of New York, will hold its thirty-ninth stated meeting at the Hotel Astor, on Tuesday evening, December 20th, at 8:30 o'clock. Dr. G. Morgan Muren will read a paper on Transplantation of the Vas Deferens, which will be discussed by Dr. George Knowles Swinburne. Dr. William J. Lederer will read a paper on Alveolar Abscess, which will be discussed by Dr. Hasbrouck, Dr. Dickinson, and Dr. Greenstein. At the close of the scientific session there will be a meeting of the executive council.

The Prevention of Insanity.—The first public meeting of the Committee on Mental Hygiene of the New York State Charities Aid Association will be held at the New York Academy of Medicine on Friday evening, December 23d. Dr. Albert Warren Ferris will speak on The State's Duty in the Prevention of Insanity; Dr. M. Allen Starr will speak on Our Present Knowledge of the Causes of Insanity; Mr. Homer Folks, on A Plan of Campaign, and Dr. Samuel McCune Lindsay, on Newer Forms of Popular Education.

The American Society of Sanitary and Moral Prophylaxis.—A stated meeting of this society will be held at the New York Academy of Medicine on Thursday, December 22d, at 8:30 p. m. Papers will be presented by Prof. E. R. A. Seligman, of Columbia University, and Prof. Felix Adler, on the Sanitary Supervision of Prostitution. The subject of control of venereal diseases by the health department will be discussed by Dr. Abraham Jacobi, Dr. Stephen Smith, Dr. Thomas Darlington, and Dr. Eugene H. Porter, State Commissioner of Health, followed by a general discussion.

To Investigate the Outbreak of Typhoid Fever at Annapolis.—A special board has been detailed by the Navy Department to investigate conditions surrounding the outbreak of typhoid fever at Annapolis. The board is composed of Medical Inspector John M. Edgar, Surgeon Edward G. Parker, Surgeon Charles St. J. Butler, and Passed Assistant Surgeon Owen J. Mink. The department, it is said, is not so much concerned over the prevalence of the disease as it is over the cause. It is believed that the fever has about spent its force, and it is stated that there is no cause for alarm. As soon as the disease developed to any extent special nurses were sent to the academy from the Naval Hospital in Washington.

An International Congress on Opium.—The State Department at Washington, D. C., announced on December 12th the successful completion of long continued negotiations for an international conference to suppress the opium traffic. With one exception all the nations addressed have agreed to the conference and word came from The Hague that May 30, 1911, had been unanimously accepted as the date and The Hague as the place for the conference. The nations which have accepted the invitation are China, Great Britain, France, Germany, Italy, Japan, the Netherlands, Persia, Portugal, Russia, and Siam. Great Britain proposes to include morphine and cocaine with opium in the prohibition to be enforced, and America will support this proposition. The State Department is preparing legislation to be submitted to Congress regulating the interstate traffic in the three drugs.

The Medical Association of the Greater City of New York.—A stated meeting of this association will be held in Du Bois Hall, New York Academy of Medicine, on Monday evening, December 19th. After the nomination of officers for the year 1911 the following programme will be presented: Morbific Processes Controlled by the Hypodermic Use of Aseptic Chemical Solutions, by Dr. J. Blake White, to be discussed by Dr. B. Lapowski; Six ten minute papers on the question of reflex disturbances, as follows: Reflexes in Surgical Diagnosis, by Dr. Robert T. Morris; Reflexes dependent upon Eyestrain, by Dr. E. M. Alger; Reflexes dependent upon Nose and Throat Conditions, by Dr. W. Sohier Bryant; Reflexes dependent upon Ear Conditions, by Dr. John Randolph Page; What is the Meaning of Reflex, by Dr. Edward D. Fisher; Reflex in Disease of the Nervous System. A general discussion of the subject will follow, which will be opened by Dr. J. H. Woodward.

The Cartwright Prize.—This biennial prize of $500, which is offered by the Alumni Association of the College of Physicians and Surgeons, Columbia University, will be awarded at Commencement, 1911. It is open for universal competition. If no one ofthe competing essays is deemed sufficiently meritorious, the prize will not be awarded. An essay, in order to be held worthy of the prize, must contain original investigations made by the writer. This prize is not awarded to any essay which is the work of more than one author, or which is at the same time submitted for another prize, or that has been previously published in any form. It must be on a medical, surgical, or kindred subject. Each competitor is required to send with his essay a statement that these requirements have been complied with. Competing essays must be typewritten, and in English, marked with a device or motto, and accompanied by a sealed envelope similarly marked, containing the name and address of the author. The payment of the prize money to the successful essayist will be made on his filing with the treasurer of this association a printed copy of the essay. Essays in competition for this prize must be sent, on or before April 1, 1911, to Dr. H. E. Hale, secretary of the Association of the Alumni of the College of Physicians and Surgeons, 770 West End Avenue, New York.

The Section in Medicine of the New York Academy of Medicine will hold its meeting of Tuesday, December 20th, in Hosack Hall, beginning at eight o'clock. At a meeting of this section, held on January 18, 1910, Dr. N. E. Brill reported upon *An Infectious Disease of Unknown Origin,* presenting a symptom complex observed by him in over two hundred and fifty cases. The section during the year just closing has been engaged in the consideration of this disease and has secured from time to time reports upon the cases observed by members of the section. In order to follow these cases as they appeared in the various hospitals of the city, the chairman of the section appointed the following committee: Dr. J. A. Fordyce, Dr. S. Lustgarten, Dr. W. Gilman Thompson, Dr. Warren Coleman, Dr. T. C. Janeway, Dr. Morris Manges, Dr. E. Libman, Dr. D. Bovaird, Dr. J. S. Thacher, Dr. L. A. Conner. Every facility for seeing cases, on one of which an autopsy was performed, has been afforded the committee. At the December 20th meeting a report from this committee, together with a record of the findings in the fatal case, will be presented. The subject will be discussed by Dr. John F. Anderson, Director Hygienic Laboratory, Public Health and Marine Hospital Service, Washington, D. C.; Dr. Alfred Stengel, Philadelphia, and Dr. Warfield T. Longcope, Philadelphia.

Gifts and Bequests to Charity.—The following charitable bequests are included in the will of the late Isaac Stern, who died in New York on Monday, December 5th: Mount Sinai Hospital, of which Mr. Stern was the president, $10,000 for the creation of the Isaac and Virginia Stern Endowment Fund; United Hebrew Charities, $2,000; Hebrew Orphan Asylum, $2,000; Home for Aged and Infirm Hebrews, $1,000; Educational Alliance, $2,000, and $4,000 to the Montefiore Home, being the remainder of a subscription made by Mr. Stern during his lifetime.

The will of the late George L. Fox, of Brooklyn, which was filed on December 13th, includes the following bequests: Eastern District Hospital and Dispensary, $100,000; St. Catherine's Hospital, $25,000; Brooklyn Hospital, $20,000; St. Mary's Hospital, $25,000; German Hospital, $25,000; Roman Catholic Orphan Asylum, $25,000; Hebrew Orphan Asylum, $25,000; Jewish Hospital, $25,000; Home for the Aged, conducted by the Little Sisters of the Poor. $50,000; industrial School Association, $10,000; Brooklyn Howard Colored Orphan Aylum, $25,000; Industrial Home for the Blind, $15,000; Brooklyn Home for Aged Colored Persons, $10,000; Home for Consumptives, $10,000; St. John's Hospital, Long Island City, $20,000; New York Ophthalmic and Aural Institute, $10,000; Young Men's Christian Association, Eastern District Branch, $5,000; St. Vincent's Home, $15,000; Society of St. Vincent de Paul, $25,000, and Dr. William E. Beardsley, $5,000. The residuary estate, the value of which has not been computed, is bequeathed to the Brooklyn Bureau of Charities and the Brooklyn Association for Improving the Condition of the Poor. Mr. Fox directs that a substantial part of the residue be used for the relief and aid of crippled and blind children.

The will of Patrick Curran, who died recently in Philadelphia, contains the following bequests: $5,000 each to St. Vincent's Home, Home for the Homeless, St. John's Orphan Asylum, and St. Joseph's Home for Homeless Boys; $3,000 to the Little Sisters of the Poor, and $3,000 to the Free Hospital for Consumptives, White Haven, Pa.

The Late Dr. Charles Jewett.—At a meeting of the Council of the Medical Society of the State of New York, held in Albany on December 3d, the following resolutions were unanimously adopted:

In the death of Dr. Charles Jewett not only has the Medical Society of the State of New York lost its honored president, but the medical profession of this country will miss from its ranks a tireless worker, a distinguished teacher, and an eminent surgeon.

In the fulness of years and the ripeness of experience there was conferred upon him his last public honor, the presidency of the State Society. Unsought for and undesired, it was conferred by his colleagues as a fitting recognition of his distinguished achievements and his sterling worth.

However distinguished the office there was something about the man that no office could compass, and no honor could magnify. For whether in the councils of the mighty, or in the homes of the humble, his services were always distinguished, and his judgments clothed with authority.

Among the obstetricians he was a leader by right of worth and superiority, by force of character and quality of achievement.

He crystallized his knowledge into literature and enriched his profession by a fruitage that will live as a permanent asset.

Because of his ability to sift, correlate, clarify, and vitalize the truth, he was a teacher of power and preeminence; and a host of students throughout the world are the living witnesses of his scholarly and forceful personality.

Because of his advanced thought and judicial mind, his counsel and advice were sought by his brethren in the perplexities of human suffering, and the depth of his knowledge and the strength of his character were always an abiding inspiration.

The Medical Society of the State of New York, sorrowing in the loss of its distinguished president, humbly voices its appreciation of his work and his worth; and thus again renews its faith in the permanency of character, the supremacy of service, and the triumph of worth.

William Francis Campbell, M.D.
E. B. Cragin, M. D.
J. A. Sampson, M. D.

The Red Cross Christmas Seals.—Announcement comes from the headquarters of the American National Red Cross Society that Christmas seals are being printed at the rate of a million a day and that already over sixty millions have been given out to agents in all parts of the United States. The demand for these holiday seals is greater this year than ever before. At the same time the Red Cross Society issues a warning, calling the attention of all users of these seals to the ruling of the Post Office Department that these stickers must be placed on the *backs* of letters and packages. To avoid the possibility of the misuse of holiday seals, warning cards are being posted in every booth where Red Cross Seals are sold, stating that the stickers are not good for postage and must be used only as seals. Already several million seals have been sold to large manufacturing concerns and other business houses in all parts of the United States, and orders are coming in hourly. The outlook for selling one hundred million seals is very bright.

Vital Statistics of New York.—During the week ending December 3, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,385, corresponding to an annual death rate of 15.04 in a thousand of population, as compared with a rate of 15.66 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 15.46; the Bronx, 15.43; Brooklyn, 14.98; Queens, 12.12; Richmond, 12.66. There were 131 stillbirths. The deaths of children under five years of age numbered 320, of whom 194 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 30; over five years of age, 36. There were 139 deaths from pulmonary tuberculosis, 148 from pneumonia, 99 from bronchopneumonia, 104 from Bright's disease, 160 from organic heart diseases, and 64 from congenital debility and malformations. There were 14 deaths from suicide, 6 from homicide, and 72 due to accidents. One thousand and ninety-one marriages and 2,749 births were recorded during the week.

The Health of Philadelphia.—During the week ending November 19, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 22 cases, 4 deaths; scarlet fever, 67 cases, 1 death; chickenpox, 30 cases, 0 deaths; diphtheria, 90 cases, 8 deaths; measles, 39 cases, 2 deaths; whooping cough, 13 cases, 3 deaths; pulmonary tuberculosis, 89 cases, 51 deaths; pneumonia, 38 cases, 60 deaths; erysipelas, 5 cases, 0 deaths; mumps, 7 cases, 0 deaths; infantile paralysis, 3 cases, 0 deaths; trachoma, 2 cases, 0 deaths; tetanus, 1 case, 0 deaths; trichiniasis, 2 cases, 0 deaths. There were 3 deaths from tuberculosis other than that of the lungs, 5 from diarrhœal diseases under two years of age, one from puerperal fever, and two from malarial fever. There were 31 stillbirths: 18 males and 13 females. The deaths of children under five years of age numbered 92, of whom 55 were under one year of age. The deaths from all causes, exclusive of stillbirths, numbered 469, in an estimated population of 1,598,400, corresponding to an annual death rate of 15.26 in a thousand of population.

The Health of Chicago.—During the week ending December 3, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 56 cases, 8 deaths; measles, 78 cases, 1 death; smallpox, 0 cases, 0 deaths; whooping cough, 8 cases, 0 deaths; scarlet fever, 122 cases, 5 deaths; diphtheria, 382 cases, 18 deaths; chickenpox, 79 cases, 0 deaths; tuberculosis, 154 cases, 63 deaths; pneumonia, 68 cases, 143 deaths. There were 2 cases of German measles, 1 case of cerebrospinal fever, and 19 cases of contagious diseases of minor importance, making the total 969, as compared with 869 for the preceding week and 762 for the corresponding week last year. The deaths under two years from diarrhœal diseases numbered 27, and there were 33 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 155, of whom 104 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 651, corresponding to an annual death rate of 15.6 in a thousand of population, as compared with a rate of 14.7 for the preceding week and 13.9 for the corresponding period last year.

A State Hospital for the Treatment of Cancer Proposed.—Dr. H. R. Gaylord, in charge of the Cancer Laboratory in Buffalo, was an interesting speaker before the special joint committee of the Legislature of the State of New York, which is investigating the State institutions and State departments, which had a meeting in the Finance Committee rooms in Albany, on December 3d. Dr. Gaylord is reported to have said that his institution is the first and leading one of its kind in the world. It has conducted research into cancer until by animal experimentation it has demonstrated that it can be cured by vacciuation if taken in time. He asked that the State take over an adjoining piece of property and establish there a State hospital to treat cancer under its methods.

The Wisconsin Antituberculosis Association.—Dr. M. P. Ravenel, head of the department of bacteriology in the University of Wisconsin, was reelected president of the Wisconsin Antituberculosis Association, at its annual meeting, held in Milwaukee recently. Other officers elected were: Mrs. Francis Boyd, of Milwaukee, first vice-president; Dr. L. E. Reber, of the University of Wisconsin, second vice-president; Dr. C. A. Baer, of Milwaukee, secretary; John H. Kopmeier, of Milwaukee, treasurer; Dr. Hoyt E. Dearholt, of Milwaukee, executive secretary. As a result of the association's convention, a conference of mayors and health officers will probably be held in Madison in February. The association is working for several new health laws and amendments to old ones and will hold this conference at the time the legislature is in session.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 10, 1910:

	December 3d.		December 10th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	634	139	549	154
Diphtheria and croup	264	24	281	26
Measles	142	4	131	4
Scarlet fever	226	10	251	7
Smallpox	..	..	..	..
Varicella	135	..	149	..
Typhoid fever	53	15	49	16
Whooping cough	42	4	49	4
Cerebrospinal meningitis	3	10	6	8
Total	1,499	306	1,465	219

Society Meetings for the Coming Week:

MONDAY, *December 19th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society.

TUESDAY, *December 20th.*—New York Academy of Medicine (Section in Medicine); Buffalo Academy of Medicine (Section in Pathology); Triprofessional Medical Society of New York; Medical Society of the County of Kings, N. Y.; Binghamton, N. Y., Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Syracuse, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association.

WEDNESDAY, *December 21st.*—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery; Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York (annual); New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association; New York Society of Internal Medicine; Northwestern Medical and Surgical Society of New York.

THURSDAY, *December 22d.*—New York Academy of Medicine (Section in Obstetrics and Gynæcology); East Side Physicians' Association, of New York; Brooklyn Pathological Society; Hospital Graduates' Club, New York; New York Celtic Medical Society.

FRIDAY, *December 23d.*—Academy of Pathological Science, New York; New York Society of German Physicians; New York Clinical Society.

SATURDAY, *December 24th.*—West End Medical Society, New York; New York Medical and Surgical Society; Harvard Medical Society, New York; Lenox Medical and Surgical Society, New York.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

December 8, 1910.

1. What Medical Societies Can Do for the Health of the People, By JOHN RITCHIE, Jr.
2. Experiments on Transmission of Bacteria by Flies with Special Relation to an Epidemic of Bacillary Dysentery at the Worcester State Hospital, Massachusetts, 1910, By SAMUEL T. ORTON and WALTER L. DODD.
3. Report of a Study of Brown-Séquard's Epilepsy in the Guineapig, By A. A. TAFT.

2. Transmission of Bacteria by Flies.—Orton and Dodd report their results in experiments on transmission of bacteria by flies. There existed at the Worcester State Hospital an epidemic of bacillary dysentery in July and August, 1910, consisting of 136 cases. Their conclusions are: An organism conforming to the Shiga type of *Bacillus dysenteriæ* was recovered from ten out of fifteen cases examined. *Bacillus prodigiosus* planted in the laundry was recovered from flies caught in traps in the scullery and five screened ward dining rooms at an interval of from two to six days after the original plant. It proves impracticable in most insane hospitals to keep the flies from access to fæcal matter and from food when they are present outside in large numbers and, therefore, the best prophylaxis against fly borne epidemics is in cleaning up the breeding places of the fly to reduce its numbers or eradicate it. The typhoid fly—*Musca domestica*—breeds in tremendous numbers in decaying vegetable waste of varying sorts, and a search for maggot infested places with subsequent attention thereto offers the best line of attack. The house fly's egg to adult cycle is ten days, so that vegetable waste should be cared for at least once a week during fly season. Horse manure may be treated by chemical means, but it is probable that, if it is kept dry and in the dark, but little breeding will take place. Mixing with many times its bulk of cow manure may prove effective. When possible, all waste material should be plowed into the land without accumulating. Spreading over the land will probably suffice to reduce the pest markedly. In hospitals surrounded by considerable ground it is probable that the great majority of the flies are home grown, and the extermination of their breeding places is an object which cannot be overlooked.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 10, 1910.

1. Use of Typhoid Vaccines in Typhoid Fever, By JAMES M. ANDERS.
2. Fundamental Principle Underlying the Treatment of Wounds on the Body Surface, By CHAUNCEY E. TENNANT.
3. Some Effects of Bright Light on the Eyes, By J. HERBERT PARSONS.
4. Physiological Action, Uses, and Abuses of Alcohol in the Circulatory Disturbances of the Acute Infections, By JOSEPH L. MILLER.
5. Magnesium Poisoning. The Study of Ten Cases, By WILLIAM F. BOOS.
6. Different Forms of Mediastinal Pleurisy, with Report of Three Cases, By ANDERS FRICK.
7. Traumatic Rupture of Fixed Portion of the Male Urethra, By OTTO J. GAUB.
8. The New Treatment of Syphilis. Ehrlich-Hata. Observations and Results, By HENRY L. ELSNER.
9. The Cultivation of the Tissues of the Chick Embryo outside the Body, By MONTROSE T. BURROWS.
10. The Renal Activity in Pregnant and Puerperal Women as Revealed by the Phenosulphonephthalein Tests, By F. C. GOLDSBOROUGH and F. C. AINLEY.
11. Obstruction of Bowel—Dietl's Crisis, By REXWALD BROWN.
12. Extracerebellar Tumor, By EDWARD L. MOORHEAD.

1. Typhoid Vaccine.—Anders reports eight cases in which small doses of vaccine were employed, initial doses of twenty-five millions, and subsequent one of fifty millions each. These were repeated at intervals of seventy-two hours, as a rule. According to some writers, a safe and useful initial dose is from 300 to 350 millions of organisms; this sometimes produces a reactionary rise of temperature to 105° F. In his view, massive doses should not be employed in the milder forms of typhoid fever for the reasons previously adduced. In his series, in all save one of which the Widal reaction was present, a reactionary fever did not occur, but in two instances the nocturnal remissions of temperature became distinctly greater immediately after the use of the vaccines, and in one instance of protracted subfebrile temperature due to typhoid fever, it would seem that they were sufficiently powerful to cause a gradual decline of temperature to the normal in the course of several days. Anders concludes that vaccine therapy in the treatment of typhoid fever should receive a more extended trial than hitherto, more particularly in the earlier stages of mild types of the disease, before being rejected. Finally, in the present state of our knowledge, the value of vaccines for the following purposes must be conceded as a means of prophylaxis; in suitable cases when continued during convalescence, to prevent relapses; to combat local infections with the typhoid bacillus, as for example, bone suppurations which arise in the period of convalescence and for the removal of the typhoid bacilli from the fæces and urine in the case of typhoid carriers.

4. Physiological Action of Alcohol on the Circulatory Disturbances of Acute Infections.—Miller says that in the circulatory disturbances of the acute infections, impairment of the vascular regulating mechanism is more apparent than active disturbance of the heart, and therapeutic measures should be directed toward the prevention or correction of these vasomotor disturbances. Alcohol in man and the lower animals, when taken in small amounts, frequently acts as a cardiovascular stimulant. The exact method of action is still disputed. Larger amounts of alcohol in individuals not addicted to its use, invariably act as a cardiovascular depressant by paralyzing the vasomotor center. The border line between the amount acting as a stimulant and the amount having a depressing action is variable, and this variability in action renders alcohol an undesirable therapeutic agent.

5. Magnesium Poisoning.—Boos states that magnesium sulphate in bulk or in concentrated solution is absorbed, in part at least, from the gastrointestinal tract into the blood. If a sufficient amount of the salt is absorbed at a given time poisoning will result; of the ten cases reported six resulted fatally. The symptoms and autopsy findings in these cases agree very well with those obtained in animals after the intravenous application of magnesium sulphate. On account of the slowness of its excretion from the system, magnesium sulphate, given repeatedly in concentrated solution, may produce poisoning by cumulation. In normal conditions of the bowel magnesium sulphate, in proper dilution, is a valuable cathartic; Hunyadi water, for example, is practically a three per cent. solution of Epsom salt (magnesium sulphate 1.5 per cent., sodium sulphate 1.5 per cent.). It is not wise to give magnesium sulphate indiscriminately in cases of so called acute intestinal obstruction, because when peristalsis is much diminished or absent, and in cases of mechanical obstruction of the bowel, even dilute solutions will be absorbed, with consequent danger of poisoning. In cases of suspected magnesium poisoning large quantities of normal salt solution should be given intravenously. Dilute solutions of lime salts given hypodermically may also be of benefit. The subcutaneous use of magnesium salts to produce catharsis is not only absolutely irrational, but dangerous.

6. **Mediastinal Pleurisy.**—Frick remarks that the clinical manifestations of mediastinal exudative pleurisy differ according to the part of the mediastinal pleura involved, and consequently according to the part of the mediastinum exposed to pressure. For this reason three different forms of mediastinal pleurisy are to be distinguished: 1. Pleuritis mediastinalis anterior sinistra; 2, pleuritis mediastinalis anterior dextra; 3, pleuritis mediastinalis posterior. This distinction is justified, not merely from an anatomical point of view, but because it corresponds closely to clinical facts. Pleuritis mediastinalis anterior sinistra resembles very much exudative pericarditis. The most striking symptom of a pleuritis mediastinalis anterior dextra is a very deep cyanosis of head, neck, thorax, and upper extremities. A posterior mediastinal pleurisy will, provided the exudate is deeply situated and is sufficiently large, cause inspiratory stridor and sometimes a deviation of the trachea by pressure on the trachea, dysphagia by pressure on the œsophagus, engorgement of the intercostal veins by pressure on the azygos veins, and paroxysmal cough by pressure on the pneumogastric nerve.

7. **Rupture of the Male Urethra.**—Gaub thinks that rupture at any point of the fixed portion of the male urethra is an injury of grave import. The condition of the patient permitting, immediate operation to restore the integrity of the urethral canal is imperative. Repair of the torn urethra at any point may be done through a median perineal incision. Shock is to be overcome as a primary measure. Leakage of urine in the early hours following traumatism is not to be feared. Appropriate drainage is to be instituted as a prophylactic measure against infection. Of great importance in the technique is the proper position of the patient.

8. **"606."**—Elsner states that the *Spirochæta pallida* is positively destroyed and the living contagion of syphilis is promptly removed by "606," all visible and palpable syphilitic lesions are favorably affected, and deep seated gummata are removed. The remedy stays the destructive and onward march of syphilitic ulcerations and causes their healing in surprisingly short time.

MEDICAL RECORD.

December 10, 1910.

1. I. Electric Sleep and Analgesia by Means of Frequently Interrupted Direct Currents Applied through Closed Wired Circuits. II. Electric Sleep in Paths of Displacement Currents: Unipolar and Wireless Method. Animal Myogram Experiments,
   By Louise G. Robinovitch.
2. The Normal and Pathological Liver Pulses,
   By Theodore B. Barringer.
3. A Further Report on the Treatment of Facial Neuralgia by Alcohol Injections, By O. Kiliani.
4. A Preliminary Report on the Importance in Scarlatina of an Early Bacterial Examination of the Secretion from the Postnasal Region,
   By Ernest C. Schultze.
5. Fractures of the Skull, By Alanson M. Pond.
6. Carbolic Acid Injections in Piles and Goitre,
   By Hosids Schiemann.
7. Preliminary Report of a Statistical Analysis of over Thirty-two Thousand Cases of Scarlet Fever,
   By Abdullah K. Sallom.

2. **Normal and Pathological Liver Pulses.**—Barringer observes that the auricular venous pulse in the jugular veins is probably a normal event and has no pathological significance. A large percentage of normal people show a more or less marked auricular liver pulse. No deductions can be drawn from the presence of an auricular liver pulse in cases of cardiac diseases, unless the "a" waves are decidedly prominent.

4. **Early Bacterial Examination of the Secretion from Postnasal Region.**—Schultze observes that streptococci have been found in pure culture in pus, blood, and specimens taken from the organs of children who died from scarlatinal poisoning, but the investigators by further inoculations of these cocci never have succeeded in reproducing scarlatina in the animal or human body. Five guineapigs which have been inoculated with a pure culture of the coccus described have developed a rash, fever, general malaise, etc. A future report will tell subsequent results. Some recent investigations have shown a large coccus to be often present in the blood of children ill with scarlatina. Numerous observers of late, especially in England, have shown that by the cleansing treatment of nose and throat with a mild antiseptic healthy children could be kept in contact with children ill with scarlatina without contracting the disease. Personally, the author has treated two families, six children in each family, where one member had contracted scarlatina, and by the simple process of cleaning the nose and throat three times a day for six weeks he has prevented any further spread of the disease.

BRITISH MEDICAL JOURNAL.

December 3, 1910.

1. Prophylaxis in Obstetrics, By A. W. Russell.
2. Treatment of Hypertension Based upon the Consideration of the Cause, By H. Batty Shaw.
3. The Estimation of Blood Pressure by Means of the Sphygmooscillometer, By Kenneth Eckenstein.
4. The Control of Venereal Diseases at their Source in Civil Communities, By H. C. French.
5. A Note on the Combined Use of Spinal and General Anæthesia, By A. E. Johnson.
6. Thyreoid Extract in Rheumatoid Arthritis,
   By Horace Wilson.
7. A Case of Intestinal Reflex.
   By Sir Edmond Sinclair Stevenson.
8. Proof of the Endemic Origin of Yellow Fever in West Africa, By Sir Rubert W. Boyce.
9. Case of Fatal Trichocephaliasis in a Child,
   By J. G. S. Jamieson and J. M. Lauder

1. **Prophylaxis in Obstetrics.**—Russell remarks that contracted pelvis is mostly a legacy of the rickety infant. Much can therefore be done by way of prevention if enlightened attention is paid to the feeding and hygiene of the baby from birth. The education and physical culture of the growing girl must be supervised. This is specially important at the onset of puberty and during adolescence. The young woman should understand her functions, and in her work should be protected from debilitating influences. The young wife, and especially the expectant mother, should receive the further information that is necessary for her guidance in relation to the sexual functions and the preparation for motherhood. As to the complications of pregnancy it does not seem to be generally realized by the busy practitioner out of how trifling ailments overlooked the most serious troubles arise, and how much special obstetrical studies have in recent years contributed to their more scientific treatment. In the ante partum hæmorrhages, it has been clearly shown by statistics that if the condition is properly diagnosticated under aseptic precautions and the patient put under the care of a skilled obstetrician at an early stage before she has been carelessly handled, the chances of the mother and child are infinitely better. The same remark applies to the early diagnosis of really difficult cases of contracted pelvis or marked disproportion between the sizes of the child and the pelvis. With regard to the process of labor he remarks: Abortion or miscarriage is really a miniature labor and should receive at least the same prophylactic care as ordinary labor. The mother needs to be taught this otherwise and earlier than by the unhappy lesson of a weakening hæmorrhage or a septic infection. The induction of premature labor has still a place among obstetric operations, but it must be done after careful, and even repeated, examination under an anæsthetic, so that the pregnancy may be allowed to run as near the full term as is consistent with spontaneous delivery. When this is done the results are most satisfactory. This has proved itself a great boon, alike to the practitioner and the patient, and not the least important of the cases that need such consideration are the patients who can thus be saved from operative procedure later on by the induction of premature labor under favorable conditions. The forceps should be considered a surgical instrument, and its use a surgical operation. As a consequence the sterilization of instruments and the disinfection of all parts of operator, nurse, and patient, that are liable to be touched, should be thorough, and this asepsis should be maintained. In this way there is some hope of avoiding the septic infection that so frequently results from handling. The forceps should never be used without distinct indications on the part of the mother or child of the need for it, and delay in the labor is very rarely a reason in itself. The use of the forceps should always be preceded by a careful measurement of the pelvic cavity, so far, at least, as to gauge the relation of the child's head to the pelvic brim. One of the painful experiences of an obstetrician in consulting and hospital practice is to get cases submitted to him after prolonged use of forceps or repeated attempts at their application that would never have been tried in this way if an intelligent examination had been made, and to him is left without choice the melancholy duty of breaking up the child when one of the newer operations might have saved it and been even less dangerous to the mother. Vaginal section has not been found to be useful in complications at full time, although it may be sometimes advisable to incise a rigid cervix to save irregular laceration. Its place is rather in the earlier months of pregnancy, where late abortion or miscarriage has to be completed or pregnancy terminated for some other reason. The range of pubiotomy or symphysiotomy is so limited, and the risk of injury to important structures is so great, that he does not express any distinct preference between them. Cæsarean section has for a long time been a tremendous boon in cases of extreme contraction of the pelvis. In these modern days its scope has been greatly extended, and it is now available as an operation of choice for eclampsia, for placenta prævia, and for transverse presentations in contracted pelvis where decapitation or embryotomy of a living child would be the only alternative. The new modifications of the operation by the extraperitoneal method are at present on their trial, but this variation seems to him to be likely to take its own place among the operations.

3. **Estimation of Blood Pressure by Means of the Sphygmooscillometer.**—Eckenstein describes Pachon's sphygmooscillometer, and speaks of its advantages over the older blood pressure meters: One great advantage is the absence of the personal equation. Those who have worked with instruments of the Riva-Rocci type must have been struck with the difficulty that is sometimes experienced in determining the exact moment at which the registering finger can no longer distinguish the pulse. This difficulty may be made still more marked if two observers perform the experiment, one of whom is engaged in watching the sphygmomanometer while the other is occupied solely with feeling the pulse. With the oscillometer there is no such difficulty, as the disappearance or reappearance of the pulse is indicated by the needle. The oscillometer should be used exactly as a Riva-Rocci instrument—that is to say, the armlet should be applied over the brachial artery and the finger on the radial pulse. The separator and registering needle are to be ignored. The pressure is raised gradually until the pulse is no longer felt. If the separator is now depressed, the registering needle will be seen to oscillate freely, and an increase of pressure equal to a varying number of centimetres of Hg will be required to abolish the oscillations. It may be noted that, whereas with the Riva-Rocci instrument the pressure is applied over the brachial artery and the pulse felt at the wrist, with the oscillometer the pressure and the indication of the pulse wave take place at the same point.

5. **Spinal and General Anæsthesia.**—Johnson observes that consciousness on the part of the patient is practically never desirable during a major surgical operation, not only for the sake of the patient, but also for the comfort of the surgeon. The reports as to psychic influences affecting patients during spinal anæsthesia are rather conflicting, but these effects have obviously been quite noticeable from the fact that so many surgeons have adopted the use of some narcotic such as morphine or scopo-

lamine and morphine as a preliminary to a spinal injection. He thinks that with the spinal anæsthetic, the induction of unconsciousness by the inhalation of a small amount of some general anæsthetic is superior to this combination. In young children the general anæsthetic is superfluous, and probably in the later stages of acute abdominal conditions, when vomiting is taking place, spinal anæsthesia is better used alone. Fortunately these patients are as a rule markedly apathetic, and little likely to suffer much from the effects of psychic disturbances. With regard to the choice of a general anæsthetic, ether might be given in small doses by the open method or a mixture of chloroform and ether might be used, though probably the most convenient drug would be chloroform. When, however, these drugs are contraindicated, as in diabetic patients, the best anæsthetic is nitrous oxide given with oxygen.

LANCET.

December 3, 1910.

1. Treatment and Prognosis of Exophthalmic Goître, By W. Hale White.
2. Recurring Arterial Hypertonus in Granular Kidney and in Migraine, By William Russell.
3. Diagnosis and Treatment of Cystic Disease of the Breast, By D'Arcy Power.
4. Heart Strain and Dilatation, By J. F. Goodhart.
5. Further Remarks Regarding the Motor Functions of the Stomach, By H. M. W. Gray.
6. Intramedullary Lesion (Gumma ?) of the Spinal Cord with Brown-Séquard Phenomenon and Recovery, By Alfred Bernstein.
7. A Case of Intestinal Obstruction Caused by an Enterolith Spontaneously Cured by Evacuation through an Umbilical Fistula, By David M. Greig.
8. Notes upon an Outbreak of Illness Due to Tinned Meat in the City of Carlisle, By Joseph Beard.

1. **Exophthalmic Goître.**—White has notes of eleven cases in which operations have been performed upon the thyreoid gland with a view of benefiting exophthalmic goître. Of these cases four patients died as an immediate result of the operation. The first, a woman aged thirty, had the disease to an average degree, but was anxious for operation as the disfigurement prevented her from following her occupation as a barmaid. The right lobe of the thyreoid was removed; the next day she became very excitable and nervous; the temperature rose to 103° F., the pulse became very fast, and she died. The second patient, a woman aged nineteen, had the right lobe and isthmus excised. She died on the day after operation. The third patient, a woman aged twenty-nine, had both superior thyreoids tied. Later, under the attempt to tie the inferior thyreoid, she suddenly died. The fourth case was that of a young woman who died on the operating table just as the operation of removing the left lobe was being completed. Seven patients who were operated upon did not die. The first had one lobe removed; she says (five years after the operation) that she is better. The second had the right lobe removed six years ago. Now she says that she is fairly well and is better for the operation. The third had the left lobe and isthmus removed. She says that she received great benefit, but that now she is "very bad at times." The fourth had the right lobe removed, and is now perfectly well. The fifth had the left lobe removed, and she reports herself as being better but by no means well. The sixth had the left lobe removed. She was then better for a time, but the right lobe began to enlarge enormously and she again had all the symptoms of exophthalmic goître to an extreme degree. The seventh was better for the removal of the right lobe, but sixteen years after the report is: "Distinctly better; no exophthalmos; some tachycardia and palpitation. Nervous symptoms much the same. Still odd mentally." Of these eleven cases nine were of average severity and two were severe; of the latter one died and one recovered.

4. **Heart Strain and Dilatation.**—Goodhart thinks that some cases of heart strain and dilatation are not due to an essential muscle fault, but are signs of a nervous centre growing old, and that the faintness, giddiness, and irregularity of the heart may be, not cause and effect one way or the other, but special sense centres and heart both giddy together as the result of some deep seated central nerve storm or degeneration.

5. **Motor Functions of the Stomach.**—Gray remarks that it has been freely stated by surgeons throughout the world that if gastroenterostomy is done in stomachs in which no pyloric stenosis exists the patients are frequently worse after the operation than before. This is said to be the case, especially, if no other demonstrable gastric lesion is present. The neurotic condition of the patients, instead of the inefficiency of the surgeon, has been blamed for the bad result. He himself had such bad results, but has never been quite satisfied that the statement is a correct one. In a case where gastroenterostomy is done for duodenal ulcer where no organic pyloric stenosis exists the ulcer heals, the pyloric spasm disappears, and then results a patient with a gastroenterostomy stoma present in a stomach which is otherwise normal, yet it is only the rare exception in such cases to have trouble. He believes that such so called neurotic patients with prominent gastric symptoms are subjects of some lesion distal to the pylorus, whether it is in the gallbladder, appendix, or other part of the alimentary system, and the gastroenterostomy will undoubtedly make many of them worse than before because the "check action" of the pylorus will then be done away with, and food, probably undigested, allowed to go where it is not wanted. If there is irritation in any part of the alimentary tract beyond the pylorus there is apparently a "message" sent to the pylorus to hold food back. In such cases digestion is therefore upset even to the extent of causing vomiting, when relief is obtained usually at once. If a gastroenterostomy is done in such cases without removal of the cause of the symptoms, it is more than likely that the symptoms will be aggravated because this check action is rendered inert by food passing through the stoma. Gastroenterostomy should be done as a routine in order to remove permanently the local conditions which have led to the formation of the ulcer and therefore to prevent further trouble. It matters not whether gastric ulcer is due to purely local causes or whether it is the result of a more general alteration in metabolism resulting in a vicious circle which brings about the breakdown in the stomach.

BERLINER KLINISCHE WOCHENSCHRIFT.

November 14, 1910.

1. Experiences in the Method of Application and Doses of Ehrlich's Treatment, By Gennerich.
2. Biological Studies Concerning the Origin of Bones, By Karl Steffenhagen and Paul W. Clough.
3. Problems and Purposes of Clinical Instruction, By Goldscheider.
4. The Presence of Much's Tuberculosis Virus in Lupus Vulgaris, By Harald Boas and Christian Ditlevsen.
5. Quantitative Determinations of Distase in the Urine, especially Its Relation to Nephritis and Diabetes Mellitus. By O. J. Wynhausen.
6. A Case of an Extrauterine Gestation Sack Rupturing toward the Rectum. Operation through the Rectum. Recovery, By P. Bockenheimer.
7. Foreign Bodies in the Vena Meseraica Superior, By C. Benda.
8. The Inner Secretion of the Germinal Glands (*Continued*), By Muenzer.
9. Cocaine and Alypin, By Voigt.
10. The Relations of Cancer of the Stomach to the Female Genital Organs, By Ernst Runge.

1. **"606."**—Gennerich tabulates his experiences in the treatment of about eighty cases, but advances little that is new. He believes that the earlier in the disease the treatment is instituted the better will be the results. He advocates intravenous injection and, to guard against recurrences, favors the subcutaneous injection of a second dose after the lapse of two or three weeks. When the intravenous dose is small the subcutaneous injection may be made after the lapse of a shorter time, even as short as two days. In malignant syphilis he favors heroic doses of 0.5 gramme into the veins followed two days later by 0.6 gramme subcutaneously. In over eighty cases he has had three recurrences and these were all cases of malignant syphilis.

4. **Much's Tuberculosis Virus in Lupus Vulgaris.**—Boas and Ditlevsen found Ziehl-Neelsen's rods in only four cases out of twenty of lupus vulgaris, while Much's rods and granula were present in all of them, especially in the giant cells.

7. **Foreign Body in the Superior Mesenteric Vein.**—Benda reports a case in which a man died of purulent thrombophlebitis of the portal vein. Autopsy revealed not only that this was the cause of death, but that this was the result of the presence of a fish bone in the superior mesenteric vein. How the fish bone arrived in that situation is obscure.

AMERICAN JOURNAL OF OBSTETRICS.

December, 1910.

1. The Catalytic Activity of the Blood in the Toxæmias of Pregnancy, By M. C. Winternitz and F. C. Ainley.
2. Acute Pancreatitis with Report of Cases, By J. W. Poucher.
3. Cæsarean Section by the Small Median Incision above the Umbilicus, By A. B. Davis.
4. Adenocarcinoma of the Kidney, By J. G. Sherrill.
5. The Breast of the Expectant Mother. Its Care before and during the Period of Lactation, By F. Reder.
6. Progress of the Year in Gynæcology, By S. M. Brickner.
7. Progress of the Year in Obstetrics, By G. L. Brodhead.
8. Acute Hæmorrhagic Pancreatitis with Report, By J. W. Keefe.
9. Conservatism in Operations on the Uterine Appendages, By L. C. Morris.
10. Advances in the Pathology of Gynæcology and Obstetrics By R. T. Frank.
11. The Clinical Aspect of Some Recent Researches in the Chemical Physiology of Infants, By J. Zahorsky.
12. Results of Infant Feeding with Milk from City Kept Cows, By E. V. Davis.
13. Method of Feeding of More Importance than Choice of Food in Subsitute Feeding of Infants, By C. Douglas.
14. Nasal Diphtheria in Infants, By G. Scott.

1. **The Catalytic Activity of the Blood in the Toxæmias of Pregnancy.**—Winternitz and Ainley divide patients into two groups, those presenting normal catalytic activity and normal renal function and those with decreased catalytic activity and probable renal insufficiency. As the result of their experiments and clinical observations they reached the conclusions that the determination of the catalytic activity of the blood apparently offers a means of distinguishing two classes of the toxæmias of pregnancy. In some of the cases there is no departure from the normal in the catalytic activity. Such cases may include eclampsias and other toxæmias without distinct renal involvement. In other cases the catalytic activity of the blood is decreased. Among these are cases of chronic nephritis in which the increased work of the kidneys which is due to pregnancy causes renal insufficiency, and also cases of true eclampsia and other toxæmias with marked renal involvement.

2. **Acute Pancreatitis with Report of Cases.**—Poucher reports two cases of acute hæmorrhagic pancreatitis, both of which were operated in as quickly as possible after the patients were first seen. In the first case the patient was in a bad condition for operation. The diagnosis was intestinal obstruction. The pancreas was three or four times the normal size, and was not opened; death followed in ten hours. In the second case there was a large abdominal tumor, much blood in the gastrohepatic omentum, and a large pulpy pancreas. The patient recovered. The author concludes that this disease is afebrile until secondary changes in the tissues of other organs occur. In the first of his cases the fever did not begin until the pancreatic ferment had destroyed the function of the intestine and probably that of other abdominal organs. In the second case prompt and efficient drainage prevented serious action upon the tissues of other organs. The indications in such cases call for early and free incision to the pancreas with adequate drainage.

9. **Conservatism in Operations on the Uterine Appendages.**—Morris declares that true conservatism has as its objects the removal of pathological tissues or their restoration to normal, the relief of disease symptoms, the maintenance of the integrity, and potency of the Falloppian tubes, the conservation of as much of both ovaries as is consistent with the correction of the pathological condition, the maintenance of the normal anatomical relationship of the ovaries to each other and to the other pelvic viscera, the covering of raw surfaces to prevent adhesions. The following conclusions were stated: 1. Except for tuberculosis and cancer both ovaries should not be entirely removed from women under forty years of age. 2. Resection of diseased parts and plastic work on the tubes are occasionally followed by pregnancy. 3. Even with infection and involvement of both tubes and ovaries plastic work with drainage and the Fowler position

may result in regeneration. 4. Radical and conservative surgery have each the same mortality but different morbidity. 5. A secondary operation may sometimes be required which a radical operation might have obviated.

MILITARY SURGEON.

December, 1910.

1. Address of the President of the Association of Military Surgeons of the United States; Nineteenth Annual Meeting, Richmond, Va.
2. Tincture of Iodine in the Surgery of War, By NICOMEDES ANTELO.
3. Brief Study of Lobar Pneumonia, with Special Reference to Treatment, Accompanied by Condensed Statistics of the Military Hospital, San Luis Potosi, By ENRIQUE JURADO Y GAMA.
4. On Treatment of Hæmiplegia Resulting from Apoplexy, By K. S. YAU.
5. New Instrument Case of the French Army, By RUOTTE.
6. Further Observations of the Prophylaxis of Venereal Diseases in the United States Army, By L. MERVIN MAUS.
7. What Can the Navy Do with Its Tuberculosis? By C. T. HIBBETT.

2. **Tincture of Iodine in the Surgery of War.**—Antelo remarks that tincture of iodine is the ideal skin antiseptic in military surgery. It is desirable to add to the individual field dressing an adequate receptacle containing tincture of iodine. This is intended to be used to sterilize the skin at the entrance and exit wounds. In sanitary formations, where a surgeon is present, the operative field should in case of need be sterilized by the Grossich method, that is a washing of the region of operation on the eve of the operation, an aseptic application until the patient is placed on the operating table and, finally, the application of two coats of iodine tincture, one at the beginning of the anæsthesia and the other when the subject is anæsthetized. After suture of the skin, there is a last application upon the line of sutures and the borders of the incision. The hands should be treated with tincture of iodine and then decolorized with sodium hyposulphite. The supply of tincture of iodine to the sanitary formations at the front should be calculated in accordance with its use as described.

3. **Lobar Pneumonia.**—Jurado y Gama observes that pneumonia is a serious disease which has not diminished in spite of the wonderful medical progress. Among armies pneumonia causes great mortality. Most often pneumonia effects a spontaneous cure by the successful struggle of the organism. The hyperpyrexia and some biological and chemical changes that are produced in the tissues are the principal causes of the happy termination of the disease. The prophylactic treatment of pneumonia is indispensable. There is no specific remedy for this affection. Several drugs still commonly employed, such as blisters and antimony salts, are useless and dangerous. Bleeding has been forgotten to an unreasonable extent; it is a powerful resource that must be applied in many cases and in different stages of pneumonia. Digitalis preparations, strychnine, and cardiac tonics are the medicines that have hitherto proved most successful. Morphine salts are also very valuable in the treatment of lobar pneumonia. He begins its use on the fourth or fifth day of the disease in hypodermic injections at night when the patient should sleep, and occasionally during the day. No other drug ever produced a quicker relief in pneumonia. The patient rests, sleeps, all his suffering is soon relieved; cough is mitigated, pain disappears, dyspnœa is diminished; the pulse action is quieter, and even the temperature falls a little. Sometimes after the sleep produced by morphine the patient is greatly surprised on awaking to find himself completely relieved, and the crisis passed. At other times the crisis has not yet come, but pains and other troubles have been alleviated, and with this rest the organism is able to continue the fight, time has been gained, and the crisis is at last reached. There is also marked beneficial effect from morphine when the disease ends by lysis; it sustains the patient's strength and lessens his suffering while the disease is running its course. Finally, in the desperate cases accompanied by suppuration of the lung, life is prolonged, permitting the use of new and more powerful drugs. Even in the fatal cases the patient's life is maintained for a time. It is a fact that while cough is relieved, at first expectoration is also stopped, but a little later the sputum becomes more fluid, looser, and is expectorated with less difficulty.

6. **Prophylaxis of Venereal Diseases.**—Maus recommends the following order to be issued by the United States War Department in reference to prophylaxis of venereal disease in our army: 1. That monthly lectures on general, military, and personal hygiene be required of medical officers to commands, not only for the purpose of educating the officers and men in the subjects, but to enable them to preserve their health against contagious and other preventable diseases. 2. That weekly physical inspections of companies or detachments be made by an instructed noncommissioned officer, under the direction of the company commander, in undershirts, drawers, and bare feet, immediately after the Saturday morning inspection for the detection of personal uncleanliness, physical defects, condition of the teeth and feet, and contagious diseases. All men suffering from physical disqualifications or diseases should be ordered at once to the hospital for the action of the surgeon. 3. That antiseptic tubes be made a part of the kit for the soldier, and the men instructed in their use, with such orders as may be necessary. 4. That soldiers found suffering from contagious diseases rendered preventable by the use of the antiseptic measures prescribed, be regarded as having disobeyed a sanitary order and held guilty of violation of the 62nd Article of War.

ANNALS OF SURGERY.

December, 1910.

1. The Treatment of Scalping Accidents, By JOHN STAIGE DAVIS.
2. The Responsibility of the Tonsil in Tuberculous Adenitis, By FRANK S. MATHEWS.
3. Treatment of Tuberculous Glands of the Neck, By EDWARD STARR JUDD.
4. Metallic Foreign Bodies in a Bronchus. By GEORGE RYERSON FOWLER.
5. Sarcoma of the Clavicle: End Results Following Total Excision, By WILLIAM B. COLEY.
6. Transgastric Excision of Calloused Ulcer of the Posterior Wall of the Body of the Stomach, By WILLIAM J. MAYO.
7. Relation between Appendicitis and Disturbance in the Gastroduodenohepaticopancreatic Physiological System, By WILLIAM CARPENTER MACCARTY and BERNARD FRANCIS MCGRATH.

8. The Technique of Appendicostomy,
By Frank C. Yeomans.
9. Anomalous Renal Arteries and Their Relation to Hydronephrosis, By Archibald L. McDonald
10. The Anatomy and Treatment of Undescended Testis; with Especial Reference to the Bevan Operation,
By Alexis V. Moschcowitz.
11. Resection of the Male Rectum for Cancer, by the Combined Method in Two Stages,
By William C. Lusk.
12. Fracture of the Tarsal Scaphoid,
By W. R. MacAusland and B. E. Wood.
13. Charles Robert Bell Keetley, By Lewis S. Pilcher.

1. **Treatment of Scalping Accidents.**—Davis says that before the introduction of surgical cleanliness, Follin and Duplay made the statement that complete scalping was always terminated by death. To-day, since the antiseptic and aseptic era began, the prognosis as to life has been excellent. The utilization of skin grafting in the treatment of such wounds has also greatly influenced the results. There is little immediate danger from a simple scalping. In incomplete scalping there is nearly always prompt healing when the flap is replaced and properly treated, although total sloughing of the pedunculated flap is reported in several instances. In the complete variety one of the methods of skin transplantation is necessary to bring about the desired result within a reasonable time. The severe infections, once so common, may now be almost eliminated by modern methods of treatment. The unsightly deformities due to the retraction of the eyelids can often be avoided by the early application of well placed skin grafts. The new scalp is never as stable as the original one, except when whole thickness grafts are successful, and often there is much trouble caused by ulceration on the unstable healing due to pressure of the wig or some slight injury or infection. The sensation of grafted areas on the cranium extends slowly, and comes in from the periphery, as in other parts of the body, and not from the underlying tissues. Thus the greater part of the grafted area may remain anæsthetic for years. There are two clinical varieties of scalping, incomplete and complete. In this paper Davis considers thirty cases of incomplete scalping, ninety-one cases of complete scalping, and in addition eight cases due to burns and one case where the hair was torn out without injury to the scalp. Ninety-one of these accidents were caused by machinery, and all but one were females. The scalp is caught between two forces which oppose each other. The line of separation is as a rule at the junction of the scalp with the skin of the face and neck. The amount avulsed varies with the amount of hair caught and with the direction and intensity of the force. The direction of the force is usually obliquely, from front to back, with the superciliary ridges acting as the cutting instrument. The separation takes place in the loose subaponeurotic layer, but now and then the periosteum is removed to a greater or less extent. The symptoms differ somewhat in intensity in incomplete and complete scalping, depending upon the extent of the injury, the method of causation, and the force by which it is inflicted. The pain is usually slight. The hæmorrhage may be severe, although it is generally of short duration. Shock may be profound, but in the majority of cases the direct result of simple avulsion on the general condition is slight. The danger comes from the complications, which may be divided into three groups. First, those which occur at the time of the accident; second, those which occur during the progress of the treatment; third, those which are due to cicatricial contraction. The prognosis as to life since the advent of antisepsis and asepsis has been excellent. The utilization of skin grafting in the treatment of these wounds has also greatly influenced the results. The treatment of cases of scalping requires patience and much care, and varies markedly in the incomplete and complete varieties. In cases of incomplete scalping, all that is necessary in the majority of cases, in addition to the pedicle supply is absolute surgical cleanliness, with free drainage and accurate approximation of the wound edges with sutures, and properly chosen dressings. The treatment of complete scalping is a much more difficult problem. Both clinical and experimental evidence show that it is useless to replace the scalp *in toto* and expect it to heal, but strips of the scalp may be successfully applied on the periosteum along the wound edges, as immediate whole thickness grafts. He believes that it would be well worth trying to preserve a portion of the avulsed scalp to be applied when the granulations are well started. The scalp may be replaced, sutured, and drained after very thorough cleansing, and used as a dressing, and if carefully watched and removed at the proper time will not cause infection. As the old method of allowing these wounds to heal by cicatrization is no longer to be thought of, one of the methods of skin grafting is necessary. Immediate grafting has been successful in a few cases, but it is better to wait until the granulatons are in good condition. The periosteal blood supply is very poor and granulations form on it slowly, and the chance of success on a large area of uncovered periosteum is small.

10. **Anatomy and Treatment of Undescended Testis.**—Moschcowitz gives the following reasons for operations for undescended testes: Every undescended testis is accompanied by a hernia, either actual or potential. Furthermore, in these herniæ, the application of a truss is either impossible or painful. The use of the forked truss has in his hands not proved serviceable. The undescended testis is more subject to trauma than the normally situated testis. It is important to remember that the testis possesses two functions, the elaboration of spermatozoa, and the maintenance of sexual characteristics. In undescended testis the burden of belief seems to be that the spermatogenetic function is either totally absent or reduced to a minimum. Although it is stated by many that the replacement of the testis within the scrotum restores its spermatogenetic function, our author has not been able to convince himself of this entirely. The not infrequently observed development of malignant tumors in nondescended testes should be considered as an indication for operation. An undescended testis is peculiarly liable to certain accidents, which may frequently threaten and destroy its life, as to torsion of its spermatic cord. Extension of a gonorrhœa to a scrotal testis or metastatic involvement in mumps is sufficiently distressing, but these conditions in an undescended testis are very grave and may even menace the patient's life. A minor reason, perhaps, and yet not a negligible one, is the

psychic depression under which adults suffer when only one, or worse still, when neither testis is in the scrotum. There is no contraindication, except perhaps extreme youth. This, however, merely implies a postponement of the operation to a suitable age. Personally he has decided upon the age of three as the lowest limit, and postpones operation in all younger cases, unless forced to operation by strangulation or other accidents.

AMERICAN JOURNAL OF SURGERY.

December, 1910.

1. The Operative Treatment of Cranial Fractures, By FRANK HARTLEY.
2. Diseases of Bone and Their Distinction by Means of the Röntgen Rays, By GEORGE E. PFAHLER.
3. Remarks on Contusion of the Back and Its Complications Based upon Observation of 296 Cases, By WALTHER LATHROP.
4. Local Anæsthesia, By ARTHUR E. HERTZLER.
5. Acute Angulation and Flexure of the Sigmoid a Causative Factor in Epilepsy. Preliminary Report of Thirty-one Cases, By W. A. AXTELL.
6. A Practical Syringe for Intramuscular Injections, By VICTOR C. PEDERSON.

1. **Cranial Fractures.**—Hartley waits until shock (that is, concussion) has passed when an examination of the wound is made. If no fracture is found and only slight intracranial injury is evident, nothing more is done. If the examination is unsatisfactory, an incision is made, and the nature and extent of the possible fracture are determined. He recommends in general: That fissures which are deep be explored with a drill, to determine the injury to the vitreous plate and to remove foreign matter. That depressed fractures, simple and compound, be raised and the fragments replaced, when perfect hæmostasis and asepticity of the wound can be obtained. When the wound is already infected or the injury to the intercranial tissues forbids replacement of the fragments, that the wound be tamponed and allowed to heal by granulation. He prefers, where feasible, the reimplantation of the fragments. In this he proceeds as follows: A thorough cleansing of the wound and surrounding skin is made. Haidenhain feather stitch surrounds the area to be exposed. A cutaneoperiosteal flap is raised. With a drill and a lever the depressed fragments are raised, cleansed, and preserved in sterile salt solution, at the body temperature. Inspection of the dura is made. If intracranial pressure is .shown by the want of pulsation and the change in color, an incision is made into it. If only a serous fluid appears, the dura may be sutured. If torn, or if pial vessels are injured, they must be treated with the finest catgut or by pressure. Sinus openings are usually sutured with fine silk. If these injuries are slight and do not require drainage, the fragments are replaced between the dura and the periosteum in a thin layer of mosaic work. An exact closure of the soft parts and a primary union is the best guarantee of success.

2. **Diseases of Bone.**—Pfahler remarks that the x ray evidence of disease in the bone is fairly characteristic of each variety, when studied from good plates showing much detail. When taken in conjunction with the clinical evidence and history a diagnosis can nearly always be made preceding the operation. The location and extent of the disease can always be determined, and thereby the surgeon can plan definitely his operation before beginning. In the unusual types of disease, one must study the plates in great detail and then weigh the evidence very carefully.

6. **Syringe for Intramuscular Injections.**—Pederson describes his syringe thus: The large thumbpiece on the plunger acts as a pedestal or base upon which the syringe will stand, needle up, while the patient is being prepared. This is a much better arrangement than laying the syringe down which involves the likelihood of having the needle become contaminated. The shaft of the plunger is heavily and distinctly graduated into ten equal subdivisions, each representing a tenth part of a cubic centimetre, which is the total capacity of the syringe. The plunger of the piston is of generous size, and made of asbestos. It may be expanded or contracted by seating the two spurs below it into corresponding slots at the base of the syringe; thus the plunger may always be kept fluid tight. The glass barrel is made heavier than that of most syringes in order to avoid breakage so far as possible. With the same purpose also the fenestra in the metal barrel is comparatively small, the graduations on the shaft of the plunger taking the place of those usually put upon the glass barrel. The finger rests are stout, and will not bend under ordinary pressure.

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Proceedings of Societies.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Fifth Annual Meeting, held in Wichita, Kansas, October 11 and 12, 1910.

The President, Dr. G. H. MOODY, of San Antonio, Texas, in the Chair.

(Concluded from page 1203.)

Postoperative Thrombosis.—Dr. ST. CLOUD COOPER, of Fort Smith, Ark., read a paper in which he reported a case of postoperative thrombosis complicated with neuritis.

Dr. J. D. GRIFFITH, of Kansas City, Mo., said that in his surgical work he had encountered postoperative thrombosis of the lower extremities in six cases. Two such cases he had had within the last two or three weeks, and in five of these cases the thrombosis had occurred on the left side, and in one on the right side.

Dr. EDWARD H. OCHSNER, of Chicago, stated that no one to his knowledge had been able to throw any light on the cause or causes of postoperative thrombosis, nor on the reason why it occurred more frequently on the left than on the right side. A thrombosis occurred after simple cases of appendectomy, and it took place in a larger percentage of cases on the left side than on the right after an operation for appendicitis.

Dr. J. E. GILCHRIST, of Greenville, Tex., said that we knew very little about the cause or causes of postoperative thrombosis. Thrombosis not only occurred following simple surgical operations, but it sometimes followed fevers and other conditions. He had seen severe thrombosis following typhoid fever, where the patient's limb would be greatly swollen and with blisters on it, attended with great pain and all the symptoms of a surgical thrombosis. The treatment outlined by the author of the paper was rational, and in the cases he had had he had employed the same method.

Dr. Charles H. Cargile, of Bentonville, Ark., recalled a case of thrombosis following exploration of the region of the kidney for obstinate pain. The pain was relieved by the operation. In this case the thrombosis occurred on the left side.

Dr. Howard Hill said that several years ago Franklin P. Mall, of the Johns Hopkins Hospital, conducted an investigation on cadavers in which he found in a number of cases in the common iliac vein, before it joined with its fellow of the opposite side, a constriction ring. This constriction ring led to slowing of the current in the vein in the region below. If these observations could be confirmed by some other anatomist, it would be an inkling as to why thrombosis occurred oftener on the left side. He did not know the reason.

Dr. Cooper did not think the blisters he spoke of were due to a poor circulation, but were attributable to some trophic disturbance such as was present in Raynaud's disease.

Methods and Material the Secret of Success in Local Anæsthesia.—Dr. Arthur E. Hertzler said that cocaine as an anæsthetic was efficient in all situations, but its congeners were less so. Quinine, on the other hand, was quite efficient as a local anæsthetic in any condition. As to safety, cocaine was a dangerous drug. It was the fear of using a sufficient amount of cocaine to secure results that made the drug inefficient. If we used enough of it it was efficient. Quinine was safer in any amount for local anæsthesia. It was also efficient. Cocaine did not interfere with wound healing. Quinine did under certain conditions produce some disturbance in wound healing. The anæsthetic effect of cocaine lasted from twenty to thirty minutes. The anæsthetic effect of quinine lasted all the way from several hours to several weeks. That likewise could be controlled by the method of application. With these materials at hand, we were able to select in a general way the material which was satisfactory under all conditions. Cocaine, where a small amount was used, would produce the desired anæsthesia, where it was particularly desirable that primary undisturbed wound healing should take place. That applied to small operations around the face where the plastic results were the prime requisites. Operations about the throat, the tonsils, the rectum, and the anus could be performed under quinine anæsthesia. Here disturbance of wound healing was a matter of slight importance, because primary healing was impossible about the rectum and anus.

Dr. E. B. Emory, of Winfield, Kansas, said that in operations about the face for the removal of moles, he had found cocaine produced perfect anæsthesia, and he thought with less scarring than any other agent he had employed.

Dr. D. W. Basham, of Wichita, Kansas, had had considerable experience with local anæsthesia in the removal of glands and lipomas, and had done laparotomies with it, but his experience had been confined to the use of cocaine, using Schleich's No. 2. He used Schleich's No. 2 solution because it contained a low percentage of cocaine, and he used it in accordance with the method described by Dr. Hertzler.

Dr. Ward, of Texas, had not had much experience in the use of local anæsthesia, but last year he saw a well known Mexican surgeon resort to spinal anæsthesia in three cases with good results. One was a case of knee joint trouble, another a case of hip joint disease, and another a case of prostatectomy.

Dr. Griffith had operated in cases of varicocele with injections of normal salt solution. He had used endermic injections of normal salt solution in the removal of lipomas. He had operated below the umbilicus after spinal anæsthesia. He had done seventy-eight capital operations under spinal anæsthesia, such as hysterectomies, prostatectomies, etc., and, while he had had no bad results so far, it would not surprise him to hear of some at any time.

Dr. George A. Boyle, of Enid, Okla., had used weak solutions of cocaine for local anæsthesia in cases in which this drug had brought about a condition of collapse, and since then he had been afraid of it. After Schleich's method was brought out he used it to some extent and lately he had been using quinine hydrochloride and urea with gratifying results. His assistant had also obtained excellent results from its use.

The President's Address: Fatigue.—Dr. G. H. Moody, of San Antonio, Tex., selected this subject for his address. Among other things, he said that fatigue was, of course, relative in degree and followed prolonged or excessive activity. The degree of fatigue which might follow a given amount of activity or strain would depend upon the nervous integrity and the healthfulness of the individual. Also the amount of fatigue which an individual might be able to overcome promptly by rest and sleep was dependent upon the recuperative capacity of the individual and upon his opportunity and inclination for adequate rest and recuperation. The more normal and robust the individual the more easily, naturally, and irresistibly would sleep and rest follow and continue until the fatigue was fully overcome. On the other hand, the more delicate and neuropathic the individual, either from bad heredity or disease or prolonged strain or whatsoever cause, the less would be the capacity for rest and pleasurable repose, and the fatigue of each day's activities might not be fully restored from day to day, and there would result finally a chronic irritability and restlessness which rendered impossible adequate recuperation voluntarily. This tended to produce a condition simulating brilliancy in which greater efforts were encouraged in the young, until there ensued an acute breakdown or a chronic exhaustion.

The forms in which these results of prolonged fatigue and exhaustion generally appeared were indigestion, malnutrition, the various fatigue neuroses, known as the occupation neuroses, insomnia, neurasthenia, psychasthenia, hysteria, the acute insanities in which the strain of the climacteric played a part, dementia and paranoia, which were generally misfortunes of the developmental period of life. drug and alcohol addictions, the majority of which were developed as the result of a conscientious effort to bear the burdens of life by means of stimulating, anæsthetizing, or narcotizing overfatigued feelings in order to make life bearable for a while, with the hope that a change in conditions might perchance finally come, locomotor ataxia and pareses, in which continued strain and fatigue played an important part, together generally with a syphilitic diathesis and a neuropathic constitution. In fact, while the best authorities maintained that there was a specific constitutional basis in these cases, they seemed never to develop without the long continued fatigue and the neuropathic constitution in which adequate rest was difficult through life.

The Prevention and Treatment of Septic Infections of the Extremities.—Dr. Edward H. Ochsner, of Chicago, selected this subject for the oration in surgery. He said that the severer wounds that naturally came to the physician from the very first they must divide into two classes, the more superficial wounds that were likely to be infected with ordinary pyogenic microorganisms only, and those which were likely to be infected with the tetanus bacillus in addition.

In the latter the same method of disinfection was used as in the former, with the addition that we always gave a prophylactic dose of antitetanus serum, and if the wound was deep or likely to contain foreign material we laid it wide open, removed the foreign material and left the wound gaping to heal by granulation subsequently. In some parts of Chicago tetanus was quite prevalent, and up to seven years ago there were a number of cases, but since they had followed the mentioned routine they had had only one case of tetanus develop, and that in a case of severely infected compound fracture which came to them on the sixth day after the injury. All fresh wounds were treated in the following manner when they first came in: If the laceration was very extensive, the patient was given a general anæsthetic; if less severe the extremity was immersed in a two per cent. carbolic acid solution in tepid water, from five to ten minutes. This was an excellent local anæsthetic and made it possible to scrub the parts thoroughly without causing undue pain. They now scrubbed the extremity thoroughly with soap and sterile water by the aid of a brush or pieces of sterile gauze; then washed it off with ether, scrubbed it well with turpentine, swabbed it with tincture of iodine, rinsed it with alcohol, and finally put on a sterile dressing. If in spite of these precautions or because of their neglect septic infection did develop, by instituting and rigidly adhering to a definite plan of treatment we could secure healing with practically no mortality, rarely, if ever, losing a member, and usually without permanent impairment of function.

How could we destroy the bacteria or at least materially reduce their virulence without at the same time injuring the tissues or impairing the resistance of the individual? Such remedies we had in carbolic acid, boric acid, alcohol, and tincture of iodine, and by their proper combination and judicious application one could practically always obtain the desired results. Ninety-five per cent. carbolic acid was a very powerful germicide and could be safely applied with a cotton swab over the reddened, inflamed area, until the area turned white, if it was then quickly washed off with strong alcohol. It would instantly destroy innumerable pathogenic microorganisms, almost instantly relieve the pain without injuring the skin in the slightest, provided, of course, it was properly applied. After this preliminary application the extremity was encased in a large hygroscopic elastic wet dressing. For wet dressing he used a saturated solution of boric acid in water, to which from a sixth to a half or ninety-five per cent. alcohol was added. As to drainage, the veins and lymphatics could be drained by simply elevating the affected extremity, and this could be done so effectually that incision rarely became necessary. This drainage by elevation was assisted by the dehydrating power of the alcohol.

Colitis.—Dr. William H. Stauffer, St. Louis, said that errors of digestion as a cause of colitis had been much exaggerated. As causes of gastritis and enteritis, they easily took first rank. In most cases of colitis the important factors were how, when, and where we ate rather than what we ate. Syphilis, tuberculosis, and impairment of the nervous system were responsible for at least fifty per cent. of all the cases that had come under his observation. Most children, and not a few adults, responded to the call of nature only when compelled to do so, with the inevitable result that what in health was a pleasant duty was soon transformed into a painful pathological process. The most valuable diagnostic aid was the proper use of the sigmoidoscope. This instrument had not been sufficiently used by the general practitioner. Dr. Hanes, of Louisville, had rendered invaluable service by suggesting the inverted position in examining and treating patients with colitis. The treatment of colitis until recently had been very unsatisfactory. Tuberculous ulcerations might be primary and entirely local, and as such would respond to local antiseptics and nourishing food. So called membranous colitis would respond to giving the parts rest and drainage. When possible, direct applications to the diseased part should be made through the sigmoidoscope or a Walls bougie, always placed in position under direct observation. Jacobi, Tuttle, and Soper had demonstrated the impossibility of passing a rectal tube into the colon unless there was some abnormity of the sigmoid. The medication depended upon the pathology, and every indication must be met as it arose. Ichthyol and argyrol in various percentages were of signal service. Oil of eucalyptus or thyme in olive oil had given him excellent results. Appendicostomy or cæcostomy should always be employed in amœbic dysentery. Experience had shown that there should be no haste in closing the fistulæ.

Dr. L. P. Warren, of Wichita, Kansas, believed it was the consensus among expert proctologists that it was practically impossible to pass a tube into the descending colon. The sigmoid itself and rectum might be inspected, but it was not possible to pass the proctoscope sufficiently far to see into the descending colon.

Dr. S. N. Mayberry, of Enid, Okla., said that the general practitioner was not always able to interpret correctly what he saw. He asked the essayist as to the clinical appearance of early tuberculosis of the anus before the patient complained of any symptoms to speak of. Personally, after introducing the sigmoidoscope, he was unable to tell in some cases whether there was a tuberculous condition or not. He had had two cases of rectal disease in which he could not make a satisfactory diagnosis.

Dr. Stauffer said it was not possible to pass a tube into the colon in all cases, but it could be done in fifty per cent. of them. It took great care and a great deal of cooperation on the part of the patient. It could not be done the first time always, any more than the practitioner could pass a stomach tube the first time.

As to the clinical appearance of disease about the anus, the best comparison one could make of ulceration or of the various pathological conditions in this region was that they simulated very much conditions of the throat. In fifty per cent. of the cases, if one found a syphilitic ulcer in the rectum, he could look into the patient's throat and find a similar condition. Its edges and everything would correspond to the one seen in the rectum.

Gastric Röntgenology.—Dr. E. H. Skinner, of Kansas City, Mo., said that the use of the x ray in gastrointestinal diagnosis practically dated from the work of Professor H. Rieder, of the University of Munich, in 1904. He published his classical studies in stomach pathology by means of fluoroscoping the stomach after the ingestion of a pudding containing from 40 to 60 grammes of bismuth salts. At the present day no more satisfactory bismuth meal was offered, but the improvements in fluoroscopic apparatus had been interesting. The peculiar superiority of fluoroscopy over radiography depended on the ability to study the peristalsis and surgical anatomy of the alimentary tract.

Pyloric Obstruction due to Extrinsic Causes.—Dr. Gordon A. Beedle, of Kansas City, Mo., spoke of the importance of adhesions in causing pyloric obstruction, and reported several cases in which relief was afforded by separating the adhesions.

Psoriasis.—Dr. William Frick, of Kansas City, Mo., after detailing the essential features of diagnosis of psoriasis, said that there were no specifics in the treatment of this disease. Cases could not all be treated successfully in the same manner or with the same drug. Patients must be studied as well as the disease. The general health of the patient should be cared for when there was occasion to do so. Many patients with psoriasis appeared to be perfectly healthy in every other way. In these cases we could find sometimes deficient elimination, imperfect assimilation, or some other imperfection in metabolic processes of which the patients were not aware. When these defects were discovered and corrected the patients were treated with better results. He reported a case which aptly illustrated this. Of recent years it was quite remarkable to see the rapid improvement under a few treatments with the x ray. This improvement was not permanent, and must necessarily be supplemented by other methods of treatment. External treatment was resorted to in nearly all cases. Relief was obtained quicker by this means than by internal treatment. He mentioned the various drugs that were used in treating this disease, and said the essential thing to do for patients was to cure the existing disease and teach them how to avoid the causes, if possible, or how to check a beginning attack.

Officers.—The following officers were elected for the ensuing year: President, Dr. M. L. Perry, of Parsons, Kansas; vice-president for Arkansas, Dr. N. M. Griffin, of Sulphur Springs; vice-president for Missouri, Dr. W. H. Stauffer, of St. Louis; vice-president for Oklahoma, Dr. E. S. Lain, of Oklahoma City; vice-president for Texas, Dr. W. L. Allison, of Fort Worth; secretary-treasurer, Dr. F. H. Clark, of El Reno, Okla. Oklahoma City was selected as the place for holding the next meeting.

Book Notices.

[We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.]

The Practitioner's Visiting List for 1911. Thirty Patients a Week. Philadelphia and New York: Lea & Febiger, 1910.

Lea & Febiger's *Visiting List* is issued in four styles: a weekly, dated for thirty patients; a monthly, undated, for one hundred and twenty patients; perpetual, undated, for thirty patients weekly and for sixty patients weekly. The issue for 1911 contains a scheme of dentition, a gestation table, instructions for the examination of the urine, lists of incompatibles, poisons, and antidotes, a table of doses, a table of eruptive fevers, instructions for the ligation of arteries, etc.

Difficult Labor. A Guide to its Management for Students and Practitioners. G. Ernest Herman, M. B., Lond., F. R. C. P., F. R. C. S., Consulting Obstetric Physician to the London Hospital, etc. With One Hundred and Eighty Illustrations. New and Enlarged Edition, with Added Chapters on Retroversion of the Gravid Uterus and Puerperal Eclampsia. New York: William Wood & Co., 1910. Pp. xii-547. (Price, $2.50.)

Perhaps the most striking thing in this fifth edition of Dr. Herman's book is the chapter on puerperal eclampsia. He believes in the sedative treatment of eclampsia only, disapproves of the induction of labor, and leaves the reader in such a frame of mind that he is in doubt whether it is profitable to try to do much for his patient. In this respect he is at odds with his English colleagues who are more active in their treatment of this serious and at all time appalling complication of pregnancy and labor. We have said "English colleagues" particularly, because the perusal of Herman's book is followed by the impression that Continental or American literature—with the most trifling exceptions—is scarcely worthy of notice.

The new chapter on retroversion in pregnancy is excellent. Herman makes the true but paradoxical statements that "displacement is nothing, incarceration everything," and "the uterus is nothing, the bladder everything." He is also correct when he says that the majority of gravid retroverted utteri will become reduced spontaneously.

This book has been so frequently noted in the *Journal*, that it is only necessary to add at this time that, as a whole, it is an excellent exposition of a difficult subject. The chapter on contracted pelvis could not be improved upon. Differences of opinion on some topics, influenced by differing experiences, are justifiable enough, and the author need not apologize for his own judgments; nor is the reviewer justified in becoming a critic only. But we do wish that Dr. Herman would change his mind about the good effect of prompt delivery upon eclamptics.

A Manual of Obstetrics. By A. F. A. King, A. M., M. D., LL. D., Professor of Obstetrics in the Medical Department of the George Washington University, Washington, D. C., and in the University of Vermont, etc. Eleventh Edition, Revised and Enlarged. With Three Hundred and Forty-one Illustrations in the Text and Three plates. Philadelphia and New York: Lea & Febiger, 1910. Pp. xxi-713. (Price, $2.75.)

There is a vast contrast between the first edition of King's manual—which we have lying before us—and the present one, the eleventh. The great change from the "medical" to the "surgical" aspect of obstetric procedure is shown vividly in the various editions that have followed each other. In the present edition, Dr. King has taken up the question of spontaneous version by posture, concerning which he has written elsewhere. Pubiotomy is also discussed and the chapter on the vomiting of pregnancy has been brought fully up to the modern views of this phenomenon, and its relation to the other obstetric disturbances is clearly brought out. In almost every chapter there is evidence of the thorough revision of the work.

One of the elements that have made for the popularity of this manual is that it represents Dr. King's own experiences and judgment. As such, we hope it will long continue to be a favorite with students and practitioners who prefer a book of this kind for reference rather than a bulky textbook.

The Diagnosis of Smallpox. By T. F. Ricketts, M. D., B. Sc. (Lond.), M. R. C. P., D. P. H., Medical Superintendent of the Smallpox Hospitals and of the River Ambulance Service of the Metropolitan Asylums Board. Illustrated from Photographs by J. B. Byles, M. B., B. C. (Cantab.), F. R. C. S. Eng., D. P. H., Senior Assistant Medical Officer at the Smallpox Hospitals of the Metropolitan Asylums Board. With Twelve Colored Plates, 110 Black and White Plates, and Fourteen Charts. New York: Funk & Wagnalls Company, 1910. Pp. xiv-154.

It would seem that no one had more right to speak with authority on the subject of smallpox than the authors of this work, who, from the nature of their hospital connections, have necessarily seen thousands of cases of the disease. They have, nevertheless, laid such stress upon the diagnostic importance of the distribution of the eruption, elevating it to a position of first importance, that to us it does indeed seem novel, as the authors intimate in the preface.

We concede that in smallpox, as in other eruptive diseases, in fact, in the whole field of dermatology, distribution and predilection for certain sites and areas are important factors, often determining the diagnosis, but it is possible to dwell too much upon this feature, and we think that has been done in this book. The effect of friction, pressure, traumatism, etc., in determining the eruptive outbreak, and the tendency for the hollows, axillæ, knee flexures, etc., to escape, are of course familiar to all conversant with smallpox, but this is true also of syphilis and scabies, and we do not consider it a sign above all others. We are glad to note, however, that the authors grant there are exceptions. The expert would not be misled by this feature of the book, but we would caution the inexperienced against laying too much stress upon it.

The book is made up largely of illustrations, some in color (color photographs by triple negatives) but the majority in black and white, some of which are in duplicate for stereoscopic study. With few exceptions these are admirable and in conjunction with the text are invaluable aids to the study of this complicated subject. The price of the book is necessarily enhanced by the large number of illustrations, 136 in all, but they are easily worth it. The publishers are to be congratulated upon the character of the production.

Textbook of Hyperæmia as Applied in Medicine and Surgery. By Professor Dr. August Bier, of Berlin. Only Authorized Translation from the Sixth German Revised Edition. By Dr. Gustavus M. Blech, Professor of Clinical Surgery, Illinois Medical College, etc. With Thirty-nine Illustrations. New York: Rebman Company, 1910. Pp. xv-439. (Price, $4.)

Bier's hyperæmic treatment has, it seems, stood the test, and many physicians who were opposed to it or were lukewarm have now adopted the method. We are glad to see an authorized American edition of Bier's *Hyperämie als Heilmittel.* The translator has rendered the book into good English. As a translation of the German *Stauungshyperämie,* there was proposed some time ago in the *Lancet* the term "damming hyperæmia," while the Americans usually adopted "induced" and "constriction hyperæmia." Blech now proposes and uses "congestion hyperæmia," which seems a very good translation. We can well recommend the book to our American confrères.

Syphilis. By Sir Jonathan Hutchinson, F. R. S., LL. D., F. R. C. S., Consulting Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital. New and Enlarged Edition. With Twelve Colored and Twenty-four Black and White Plates. New York: Funk & Wagnalls Company, 1910. Pp. xxiv-583.

This volume, like the first edition, published in 1899, is not supposed to be a systematic treatise on syphilis, but is distinctly clinical in character and is pregnant with clinical facts of extreme interest and value. Hutchinson is as optimistic as ever regarding the curability of syphilis and suspects that the gross exaggerations prevalent respecting it cause more misery than is produced by the disease itself.

On account of his great age, having received his diploma in 1849, it has fallen to the lot of but few, as he says, to be able to follow cases so long as he has, having seen many patients "whom he treated for syphilis in their early adult vigor, now in honored gray hairs and apt to boast of their grandchildren."

The author still firmly believes sibbens, morula, pian, button, scurvy, yaws, perangi, etc., to be variants of syphilis. Admitting that the spirillum invasion is the first stage of syphilis, he thinks it would be a serious error if this parasite were regarded as representing the sum total of syphilis, for the complex symptoms which result from the spirillum invasion are often more due to the patient's proclivities than to the parasite itself. He points out three topics that urgently await investigation as to the relationship of the spirillum to the observed facts: 1. The chancre redux, in which after long intervals characteristic hardening returns in the site of the former chancre. 2. Interstitial keratitis in connection with inherited taint, which may occur symmetrically thirty to forty years after the patient's birth and prove spontaneously curable without proneness to recurrence. 3. The gumma, which may grow rapidly to a large size and yet disappear very quickly under iodide of potassium, without any tendency to return.

He regards the serum diagnosis of syphilis, as exemplified by the Wassermann reaction, as rather of retrospective than of prognostic value, and thinks we must await hopefully the results of further research, in the mean time putting our trust in clinical methods of inquiry.

His well known views on treatment with small and long continued doses of gray powder, he reiterates in the most explicit terms, advocating, as formerly, lifelong courses in general paralysis of the insane. He thinks it is doubtful if atoxyl or soamin is in any way superior to small doses of Fowler's solution, and in speaking of their danger quotes Koch, who has published twenty-two cases of optic neuritis from atoxyl, that "the elective action of atoxyl on the optic nerve is as striking as that of lead on the radial nerve." Ehrlich's recent discovery, unfortunately, came too late for discussion in this volume.

Some colored plates of extragenital chancres, etc., in the first edition we miss in this one: but there are so many more additional illustrations that the omission seems excusable. The book is intensely interesting and instructive from cover to cover and should be in every physician's library.

Practical Obstetrics. By E. Hastings Tweedy, F. R. C. P. I., Master of the Rotunda Hospital, and G. T. Wrench. M. D., Late Assistant Master. Second Edition. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xx-491.

This book is what its title indicates, essentially a practical book. Theoretical considerations are omitted and the student is brought into immediate contact with the facts of obstetrics. The mechanism of labor and the management of a normal case are well described and illustrated, and the subsequent chapters of the book are devoted to the abnormities of pregnancy, abnormal labor, the abnormal puerperium, the insanities of the reproductive period, and the infant.

There are excellent chapters on the toxæmia of pregnancy and on abnormities of the pelvis, the latter especially being very clear and instructive. The chapter dealing with uterine rupture and uterine inertia is exceedingly conservative. The authors advise against laparotomy in cases of rupture of the uterus, prefering a tamponing of the rent with gauze.

The portions of the book dealing with puerperal infection are exceedingly lucid and we think the student should gain a very comprehensive knowledge of the subject from their perusal. The authors are rather noncommittal on the value of ligation of the pelvic veins and of opsonic treatment, but they have pictured the varieties of puerperal sepsis very clearly.

The manual is intended principally for students, and it can be commended as a modern, thoroughly scientific, and exceedingly practical book.

MEDICOLITERARY NOTES.

Greek is valuable, not merely as an aid to bad spellers and to confer an ineffable feeling of superiority over those who do not know it, but because the ancient Greeks were the most wonderful thinkers in the world, and in even the small fragment of their writings that remains to us may be found the root idea of nearly every discovery we have made. An acquaintance with such clear as well as refined and polished writers has advantages not to be duplicated through familiarity with modern languages. Roman civilization was merely a copy of the Greek, and to study it in place of the original is like trying to acquire a knowledge of art by the contemplation of photographs of paintings; good enough, perhaps, for girls' finishing schools, but not for artists. As for translations of the classics, they are like canned fruit; the blush and aroma are gone. If Greek should be taught as the modern languages are sometimes imparted, by phonograph and phrase book, all objections to its acquirement would be gone. No physician is ever heard to deplore the time he spent in acquiring even a superficial acquaintance with Greek. If its study is to be confined to a few choice spirits, we shall have a real and a regrettable aristocracy of intellect.

* * *

The Speckled Band, Sir Arthur Conan Doyle's dramatization of his short story of the same name, is said to be an old fashioned, "rip roaring" melodrama, but with possibilities of popular success. It is not uninteresting to note that the play has been rewritten into a story for a daily paper, and the contrast between the flat and inelegant journalese in which this new version is written and Sir Arthur's own scholarly and distinguished style is very marked. Sir Arthur's style is like a gentleman's clothes, and does not attract attention until some literary ragamuffin bears up alongside to emphasize the contrast.

* * *

The case of Job has been variously diagnosticated as syphilis, white leprosy, a combination of these, and a special infliction of the Almighty, not admitting of scientific classification. The symptoms, however, bearing in mind that they were recorded of some individual by a writer without scientific training, are exactly those of scurvy, with its gingivitis, deep seated pains, foul—because improperly treated—wounds, and procidentia ani. The quick recovery is also characteristic of scurvy, which yields promptly to fresh food, especially the fruits and vegetables containing the potassium salts, and to malic and citric acids. The terrible mental depression of the disease is not in the least exaggerated by the writer, for the heart's action is irregular and depressed, and there is a great lack of hydrochloric acid in the gastric juice.

* * *

The good effect of the juice of the citrus fruits in scurvy was first discovered by British navigators, and to this day the crews of the few American ships afloat speak of English freight ships as "lime juicers," although modern methods of preserving foods have practically abolished scurvy and with it cargoes made up largely of limes for the use of the crew.

* * *

A young woman of New York recently fell out of a third story window during a somnambulistic promenade, but was picked up without having broken a bone. A similar feat is frequently accomplished by intoxicated persons and by virtue of the same interesting fact in physics. The unconscious individual falls all of a heap like an empty sack, all the muscles being relaxed, and often nothing more serious than a few bruises is the result. In the effort to save himself, the conscious victim of a fall puts his muscles on the stretch and lands taut from head to foot; the tension on the skeleton acting as a fulcrum is enormous and it gives way in various places.

* * *

In the *Saturday Evening Post* for December 10th, where the error may possibly be excused, and in the December *Dietetic and Hygienic Gazette* occurs the outrageous word *evolute;* in the latter publication it is of course a proofreader's error, but as it happens twice the delinquent should be sharply spoken to and told to allow the universe to *evolve* as heretofore. An article in the same issue of the *Gazette* by Dr. George M. Gould seems to state that the distinguished writer's theory as to old age is that it is due to presbyopia.

* * *

Current Literature for December has a popular article on epidemic anterior poliomyelitis with a fine portrait of Dr. Simon Flexner; it also surveys mankind from China clay to Peruvian balsam, from scientific, historic, poetic, dramatic, and all other possible viewpoints, making, as usual, a capital lot of pages for the physician's perusal. The condensing is very skilfully done and with a literary touch.

* * *

A particularly striking patent medicine advertisement is that of a hair restorer; its heading reads, "Throw away your wig in thirty days." This is a slower method than by the use of a hair remover, which is apparently made by the same manufacturers and requires only a few hours to accomplish its depilatory work.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending December 9, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Foreign.			
Austria-Hungary — Hungary, general	Oct. 30-Nov. 5	23	13
Austria-Hungary—Laibach	Oct. 24	1	
Brazil—Para	Oct. 22	2	
India—Bombay	Oct. 26-Nov. 1		2
India—Calcutta	Oct. 9-15		12
India—Madras	Oct. 22-28		4
Italy—General	Nov. 23-29	21	2
Italy—Caltanisetta, province	Nov. 6-12	1	1
Italy—Caserta, province	Nov. 6-12	34	10
Italy—Girgenti, province	Nov. 6-12	3	1
Italy—Leece, province	Nov. 6-12	3	2
Italy—Naples, province, exclusive of the City of Naples, previously reported	Nov. 6-12	9	
Italy—Palermo, province	Nov. 6-12	4	1
Italy—Perugia, province	Nov. 6-12	2	
Italy—Rome, province	Nov. 6-12	14	3
Italy—Salerno, province	Nov. 6-12	3	
Italy—Trapani, province	Nov. 6-12	1	
Madeira—Funchal	Nov. 16-29	77	
Russia—General	Nov. 16-22	803	344
Russia—Akmolinsk, territory	Nov. 16-22	35	19
Russia—Amur, territory	Nov. 16-22	30	19
Russia—Baku, prefecture	Nov. 16-22	10	2
Russia—Chernigoff, government	Nov. 16-22	1	
Russia—City of St. Petersburg	Nov. 16-22	86	23
Russia—Don, territory	Nov. 16-22	4	3
Russia—Eastern Siberia, territory	Nov. 16-22	196	76
Russia—Ekaterinoslav, government	Nov. 16-22	9	3
Russia—Erivan, government	Nov. 16-22	4	4
Russia—Ferganah, territory	Nov. 16-22	9	6
Russia—Kazan, government	Nov. 16-22	4	2
Russia—Kherson, government	Nov. 16-22	20	7
Russia—Kieff, government	Nov. 16-22	50	17
Russia—Kuban, territory	Nov. 16-22	8	8
Russia—Kursk, government	Nov. 16-22	3	
Russia—Mohileff, government	Nov. 16-22	5	6
Russia—Nijni-Novgorod, gov'ment	Nov. 16-22	2	1
Russia—Nikolaieff, prefecture	Nov. 16-22	1	
Russia—Odessa, prefecture	Nov. 16-22	2	1
Russia—Olonetz, government	Nov. 16-22	5	1
Russia—Orenburg, government	Nov 16-22	43	18
Russia—Podolia, government	**Nov. 16-22**	24	5
Russia—Poltava, government	Nov. 16-22	1	
Russia—Ryazan, government	Nov. 16-22	1	
Russia—Samara, government	Nov. 16-22	91	38
Russia—Saratoff, government	Nov. 16-22	43	18
Russia—Simbirsk, government	Nov. 16-22	6	9
Russia—Stavropol, government	Nov. 16-22		1
Russia—St. Petersburg, government	Nov. 16-22	4	1
Russia—Syr-Daria, territory	Nov. 16-22	1	1
Russia—Tamboff, government	Nov. 16-22	22	8
Russia—Tiflis, government	Nov. 16-22	6	3
Russia—Tobolsk, government	Nov. 16-22		2
Russia—Tomsk, government	Nov. 16-22	8	7
Russia—Trans-Baikal, territory	Nov. 16-22	4	7
Russia—Tver, government	Nov. 16-22	1	
Russia—Vitebsk, government	Nov. 16-22	31	15
Russia—Vladivostok, territory	Nov. 5		Present
Russia—Vologda, government	Nov. 16-22	3	0
Russia—Voronej, government	Nov. 16-22	30	20
Tripoli—Tripoli	Oct. 30-Nov. 12	158	103
Turkey—Adrianople	Nov. 7		Present
Turkey—Constantinople, vicinity		200	93
Turkey—Constantinople (on S. S. *Garb*)		30	14
Yellow Fever—Foreign.			
Brazil—Manaos	Oct. 23-29	1	1
Brazil—Para	Oct. 30-Nov. 12	23	14
Venezuela—La Guaira	Dec. 3		Present
Plague—Foreign.			
Arabia—Aden (on S. S. *Himalaya*)	**Oct. 22-25**	3	1
Egypt—Assiout, province	Oct. 7-Nov. 10	23	6
Egypt—Garbieh, province	Oct. 5-21	22	6
Egypt—Menouf, province	Oct. 3-Nov. 4	7	3
Egypt—Minieh, province	Aug. 19-Sept. 11	3	2
India—Bombay	Oct. 26-Nov. 1		15
India—Calcutta	Oct. 9-15		13
Japan—Matsuyama	Nov. 5	16	
Peru—Paitu (on S. S. *Guatemala*)	Oct. 28	1	
Russia—Odessa	Oct. 29-Nov. 4	133	39
Russia—Roksoliani	Nov. 11	2	
Smallpox—United States.			
Alabama—Mobile	Nov. 20-26	8	
Alabama—Montgomery	Nov. 13-19	1	
Florida—Dade County	Nov. 19-25	1	
Florida—Escambia County	Nov. 19-25	5	
Florida—Jackson County	Nov. 19-25	2	

Place.	Date.	Cases.	Deaths.
Florida—Leon County	Nov. 19-25	9	
Florida—Osceola County	Nov. 19-25	3	
Florida—Polk County	Nov. 19-25	2	
Florida—Washington County	Nov. 19-25	3	
Missouri—Kansas City	Oct. 1-31	11	
Missouri—St. Louis	Nov. 19-26	1	
Utah—Beaver County	Oct. 1-31	1	
Utah—Iron County	Oct. 1-31	2	
Utah—Salt Lake County	Oct. 1-31	16	
Utah—Utah County	Oct. 1-31	7	
Utah—Washington County	Oct. 1-31	7	
Utah—Weber County	Oct. 1-31	2	

Smallpox—Foreign.

Place.	Date.	Cases.	Deaths.
Brazil—Para	Nov. 6-12	3	
Canada—New Brunswick, Newcastle	Nov. 20-26	3	
Canada—Nova Scotia, Sydney	Nov. 20-26	3	
China—Shanghai	Oct. 24-30	1	10
France—Paris	Nov. 6-12	4	
India—Madras	Oct. 22-23		2
Italy—Naples	Nov. 6-12	10	1
Mexico—Aguascalientes	Nov. 13-19		2
Mexico—Mexico	Oct. 9-22	6	
Zanzibar—Zanzibar	Oct. 3-16	15	7

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending December 7, 1910:

Austin, H. W., Surgeon. Granted four days' leave of absence from December 2, 1910, under paragraph 189, Service Regulations.

Bierman, C. H., Pharmacist. Granted fourteen days' leave of absence from December 16, 1910.

Carmichael, D. A., Surgeon. Leave of absence for nineteen days from November 15, 1910, amended to read eighteen days from November 15, 1910.

Carrington, P. M., Surgeon. Granted three days' leave of absence from December 15, 1910.

Cofer, L. E., Assistant Surgeon General. Granted one day's leave of absence December 5, 1910.

Creel, R. H., Passed Assistant Surgeon. Relieved from duty in the Bureau and directed to report to the Director of the Hygienic Laboratory.

de Valin, Passed Assistant Surgeon. Directed to proceed to Chicago, Ill., and report to the medical officer in command for temporary duty.

Fricks, L. D., Passed Assistant Surgeon. Granted two days' leave of absence December 9 and 10, 1910.

Gwyn, M. K., Passed Assistant Surgeon. Granted seventeen days' leave of absence from December 24, 1910.

Iltis, G. W., Pharmacist. Granted seven days' leave of absence from November 27, 1910, under paragraph 210, Service Regulations.

Kolb, L., Assistant Surgeon. Granted two days' leave of absence in November, 1910, under paragraph 191, Service Regulations.

Lavinder, C. H., Passed Assistant Surgeon. Detail to represent the Service at the meeting of the Seaboard Medical Association to be held in Kinston, N. C., December 6 to 8, 1910, revoked on account of sickness.

McKeon, F. H., Passed Assistant Surgeon. Relieved from duty at Manila, P. I., and directed to proceed to San Francisco, Cal., and wire arrival.

McMullen, John, Passed Assistant Surgeon. Granted four days' leave of absence from November 14, 1910, under paragraph 191, Service Regulations.

Nydegger, J. A., Surgeon. Granted three days' leave of absence from December 10, 1910, on account of sickness.

Ridlon, J. R., Assistant Surgeon. Granted fourteen days' leave of absence from December 21, 1910.

Rodman, J. C., Acting Assistant Surgeon. Granted three days' leave of absence from December 6, 1910.

Stoner, G. W., Surgeon. Granted two days' leave of absence from December 6, 1910, under paragraph 189, Service Regulations.

Wertenbaker, C. P., Surgeon. Detail to represent the Service at the meeting of the Seaboard Medical Assocition to be held at Kinston, N. C., December 6-8, 1910, revoked on account of sickness.

White, J. H., Surgeon. Granted twenty days' leave of absence from December 2, 1910, without pay.

Williams, L. L., Surgeon. Granted seven days' leave of absence from December 2, 1910, under paragraph 180, Service Regulations.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 10, 1910:

Bowen, Albert S., Lieutenant, Medical Corps. December 3d, left Fort Snelling, Minn., on ten days' leave of absence.

Eber, A. H., Lieutenant, Medical Reserve Corps. December 1st, reported for temporary duty at Fort Dade, Florida.

Halliday, Charles H., Lieutenant, Medical Reserve Corps. December 3d, left Fort Fremont, S. C., on ten days' leave of absence.

Sherwood, John W., Lieutenant, Medical Reserve Corps December 5th, reported for temporary duty at Fort Strong, Massachusetts; left Fort Andrews, Massachusetts, same date.

Trinder, J. H., Lieutenant, Medical Reserve Corps. December 8th, reported for duty at Fort Jay, New York.

Weston, Henry R., Lieutenant, Medical Reserve Corps. December 5th, left Fort Strong, Massachusetts, on thirty days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 10. 1910:

Brown, H. L., Passed Assistant Surgeon. Detached from the Naval Hospital, Olongapo, P. I., and ordered home.

Olson, G. M., Assistant Surgeon. Transferred to the retired list from December 2, 1910; ordered home.

Parker, E. G., Surgeon. Ordered to the Naval Academy.

Randall, J. A., Passed Assistant Surgeon. Detached from the Naval Hospital, Olongapo, P. I., and ordered home.

Stuart, A., Surgeon. Detached from the Naval Hospital, Boston, Mass., and directed to continue duty at the navy recruiting station, Hartford, Conn.

Thomas, G. E., Assistant Surgeon. Detached from the Naval Hospital, Canacao, P. I., and ordered to duty at the Naval Hospital, Olongapo, P. I.

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Births, Marriages, and Deaths.

Born.

Cook.—In Fort Douglas, Utah, on Tuesday, November 29th, to Lieutenant George W. Cook, Medical Corps, United States Army, and Mrs. Cook, a daughter.

King.—In Fort McDowell, California, on Monday, November 21st, to Captain Edgar King, Medical Corps, United States Army, and Mrs. King, a daughter.

Died.

Aurunger.—In Mendota, Illinois, on Sunday, December 4th, Dr. A. E. Aurunger, aged fifty-three years.

Babcock.—In Gowanda, New York, on Sunday, December 4th, Dr. Horace Babcock, aged eighty-six years.

Chaney.—In Calvert County, Maryland, on Tuesday, December 6th, Dr. Thomas M. Chaney, aged sixty-nine years.

Harrison.—In Meridian, Mississippi, on Saturday, December 3d, Dr. O. A. Harrison.

Hequembourg.—In Chicago, on Saturday, December 10th, Dr. Julian E. Hequembourg, aged fifty-four years.

McHenry.—In Benton, Pennsylvania, on Friday, December 2d, Dr. Montraville McHenry, aged seventy-four years

Main.—In Laredo, Texas, on Friday, December 9th, Dr. Jeremiah Main, aged eighty-four years.

Munro.—In Boston, on Tuesday, December 6th, Dr. John Cummings Munro, aged fifty-three years.

Pohlman.—In Buffalo, New York, on Tuesday,. December 6th, Dr. Julius Pohlman, aged sixty-two years.

Taylor.—In Norfolk, Virginia, on Thursday, December 1st, Dr. Horace P. Taylor, aged forty-four years.

Terry.—In Riverhead, Long Island, on Monday, December 5th, Dr. Henry P Terry, aged seventy-one years.

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THE LAW OF DEGENERACY IN ITS RELATION TO MEDICINE.

BY CHARLES P. NOBLE, M. D., Sc. D.,
Philadelphia.

Degeneracy, or the degeneration, of man has usually been considered conventionally; that is, as being equivalent to moral perversion; and its manifestations have been discussed more especially with reference to criminals and sexual perverts. It is at once evident that a degree of moral degeneracy less marked than that which leads to breaking the statute law, or than which leads to sexual perversion is still degeneracy; it is a matter of degree and not of kind. Upon analysis it is found that moral degeneracy in its various degrees is merely a less or greater degree of selfishness.

As man has an intellectual and a physical as well as a moral nature, and if degeneracy be considered in a philosophical instead of in a conventional sense, it is apparent that intellectual and physical degeneracy must also be considered under the general term degeneracy, or degeneration. The extreme type of intellectual degeneracy is the idiot; whether of hereditary or of acquired origin. The lesser degrees are the persons with a small head and heavy body; in other words, of the microcephalic type; and in a still lesser degree it embraces persons with dull intelligence. Another large group is the imbeciles, and their diminution, the feeble minded. The various types of insanity, and also mental instability, are different manifestations of intellectual degeneracy.

Physical degeneracy exists under many forms or manifestations. The dwarf, the feeble individual, the chronic so called nervous invalid, the sufferer from so called malnutrition, are some of the types of the physically degenerate. In an absolute sense all men, who are not vigorous, healthy, and physically normal, are to a certain degree degenerate or defective; and physical degeneracy embraces every type from the man (descended from normal ancestors) who is slightly atypical to the most extreme degree of degeneracy, which is apparent to all.

The question naturally presents itself as to whether moral, intellectual and physical degeneracy bear any relation, the one to the other. As the brain is the organ of the mind and the seat of the intellect as well as of the moral nature, and as the brain is a part of the physical body, and as the activities of the brain in the intellectual and in the moral world, depend upon the integrity of the brain itself and its various parts, one would infer, upon *a priori* grounds, that the different varieties of degeneracy are related the one to the other, and that intellectual and moral degeneracy have as their ultimate foundation, aberration in the physical and vital state of the brain. It is the purpose of this paper to point out the evidence that this indication is true, and to consider more especially the bearing which this fact has upon medicine.

It is accepted by scientists that the evidence in support of the theory of evolution is satisfactory, and that it is through evolution from the simple to the complex that nature, as we now know it, has developed into its present status. Among the laws of nature which have a profound influence upon living organisms, including man, is the law of natural selection as it was named by Darwin, or the law of the survival of the fittest as it was termed by Herbert Spencer. It is through the workings of this law upon living organisms that the fit or the strong survive, and that those organisms which are less strong or less fit are crowded out or cease to exist. It is by means of natural selection that the various genera and species (including man) not only maintain their existence, but also their characteristics; that is, they remain relatively stable from generation to generation in their form and function. So far as the human is concerned, this takes place through the action of the laws of heredity and of environment—typically when the fit intermarry with their kind, and less typically when marriage takes place between opposites; the children of such marriages developing under relatively normal environment. The biologic process whereby this comes about does not concern us in this connection, as it is regeneration.

We are more especially concerned with the question as to how the unfit, or the weak, have ceased to be the strong, or the fit. This is the most easily demonstrated in the vegetable world. Let us consider the annual plant or weed which develops in poor soil with unfavorable conditions as to moisture and as to sunlight. The first year such a plant or weed grows up and is evidently not in a normal or healthy condition; it is yellow instead of green—that is, it is deficient in chlorophyl, which is the life giving principle in the plant. The following year, in the same place, the plant is not only yellow (that is, deficient in chlorophyl), but also very spindling. The third year, it is dwarfish and stunted in appearance as well as yellow; and the fourth year, if such a plant comes up at all, it is very dwarfish and yellow and fails to develop seed which can germinate; that is, the particular line of life

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disappears. The problem as studied in this connection is very simple; through heredity and environment in three or four generations the line of life has ceased. Chlorophyl represents the life principle or vital force or vitality of the plant, in which the plant, of the first year, considered was deficient. This state in the plant is the analogue of physical degeneration in animals and men. In each succeeding generation the seed of the degenerate plant contains less and less of the potential of life which is necessary to give rise to a normal plant. The process is hastened and largely influenced by environment.

The plant which we have considered represents the unfit in the vegetable kingdom, and the biological process whereby from generation to generation through environment and heredity it became progressively less and less perfect, or more and more degenerate, until the power of germination became lost, is that of degeneracy. In other words, the law of degeneracy is that which controls the biological processes whereby the fit become the unfit, the strong become the weak, and in the course of three or four generations a particular line of life dies out.

Through the law of natural selection, a part of which is that there is a tendency in man for opposites instead of similars to intermarry (sexual selection), there comes through the intermarriage of those of degenerate stock with those of better stock, an infusion of better blood; and when the offspring of such intermarriages are brought up under relatively normal environment, in the course of four generations more or less a large proportion of the offspring of degenerate stock may be brought back to the normal or relatively to the normal. Thus, the status of the genus and of the species remains relatively stable, because through the law of natural selection the strain or line of life remains normal, or is brought back to the normal when the fit intermarry with the unfit (this is regeneration by sexual selection; and more truly considered, is not a part of natural selection, but is a coordinate natural law); or through the law of degeneracy when degenerates intermarry, the particular strain or line of life disappears in three or four generations, and thus fails to affect, longer, the average of the genus or species.

The laws of nature are inevitable in their action. When an organism is subjected to unfavorable environment, involuntarily in the case of plants and domesticated animals and more or less voluntarily in the case of man, degeneration results; and when the conditions persist from generation to generation without a change of environment and without an infusion of new and better blood, the line of life disappears through loss of procreative power—through the failure to form seed capable of germination in plants; through the loss of procreative power in animals, and in man also through moral perversion, in deliberately providing against the propagation of the species.

Overcrowding, poor soil, unfavorable conditions as to moisture and sunlight, represent bad environment in the vegetable kingdom. Domestication and relative starvation represent bad environment in the animal kingdom. And civilization, more especially in its extreme of riches and poverty, represents bad environment for man. In the one (the rich) bad environment is voluntarily sought in the indulgence in luxury, idleness, the lusts of the flesh and the pleasures of the senses, and the failure to observe the law of development, which is that each member or organ can only develop through normal use and that without it, it remains undeveloped, or when developed, it undergoes degeneracy. In the other (the poor) it is involuntary, and degeneracy is caused when through necessity inordinate labor is performed, or when sufficient or suitable nourishment is impossible of attainment.

It is of interest that the law of the beast, or the law of the survival of the fittest, is, philosophically, the law of selfishness. The beasts have instinct, which guides their actions in their own interest. In man, selfishness is of two kinds: Intelligent or reasonable selfishness, which is analagous in its action to that of instinct in beasts; and unreasonable selfishness, which leads to self indulgence and to the oppression of others. In man, degeneracy is the outcome of unreasonable selfishness; in the rich through self indulgence, and in the poor through oppression and the denial by the employer to the employee of a sufficient remuneration to permit of normal living. Selfishness among the poor in its relation to degeneracy also takes the form of self-indulgence, more especially in alcoholic excesses.

In man the strong or the fit, relatively speaking, are the rich and the middle class, and the weak are the poor; but the unfit are found in all classes and are degenerates whether this be moral, intellectual, or physical. And while selfishness is the philosophical principle which causes the fit to become the unfit, degeneration is the biological process whereby this is accomplished.

The natural man is the savage, to whom the civilized man bears the same relation as does the domesticated animal to the wild or natural animal. It is a property of living beings in the course of generations to become more or less habituated to a relatively bad environment; that is, a species is evolved which is capable of living a normal life under conditions which were relatively unfavorable to the remote ancestors. In the evolution of this species, environment causes in many individuals degeneracy, sickness and death. This is the process which is going on with civilized man.

The natural man lived in the open and was obliged to take exercise in order that he might obtain the means of sustenance, which conditions are very different in modern civilization. The savage through exposure and from irregular and at times insufficient nourishment, suffered from disease which the civilized man may escape. But in most all respects he lived a more natural and healthful life. Not only does man not live in the open at present, but instead, as a matter of fact, he lives more and more not only in houses, but also in urban communities. His habits of life are relatively less and less natural as civilization, or society, becomes more and more complex or artificial. Likewise as a result of modern conditions, man is more and more subjected to strain and to irritation, no matter which is the grade of society to which he may belong. Competition in labor, in business, and in the professions is more active than formerly. The railroad, the steamboat, the telegraph, the daily press.

the telephone, and all of the various discoveries which are utilized in modern society tend to increase the burden which the nervous system has to bear in the modern man as compared with one who lived in a simpler state of society. These conditions lead to nerve strain, and this tends to increase the resort to stimulants and narcotics; and overwork, and over stimulation lead to degeneracy and to disease, the result being the peculiar diseases of civilization which have come about through the law of degeneracy.

Conditions similar in their nature have brought about the diseases of the domesticated animals; because the domesticated animal likewise lives in an abnormal environment. It does not have to work for its sustenance in a natural way, and it is housed instead of living in the open; that is, it lives under unsanitary conditions, with resulting degeneracy and loss of natural immunity.

Having seen that the diseases or morbid states of civilized man, speaking broadly, are due to degeneracy or to the fact that man has not been able to thrive under the particular environment to which he has been subjected, we will now consider what are the special diseases or morbid state of the civilized man, as contrasted with those of the savages. The most prominent of these are: tuberculosis; the surgical infections, including puerperal infection; the so called functional neuroses, including trophic changes in the body; the so called functional indigestions with their associated autointoxications; and degenerative changes in the bloodvessels, kidneys and liver, which presumably bear the relation to the former of effect to cause; the visceral ptoses; and cancer.

Man is evolved from the ovum. The ovum is potentially man, as by evolution the ovum becomes the adult man, the resultant man being the product of heredity and environment; development or growth taking place in accordance with biologic laws. The impregnated ovum having a normal line of ancestry and developing or evolving under normal environment, results in a normal adult man. As man has a physical, an intellectual, and a moral nature, and as the ovum is potentially the adult, it follows that the ovum represents potentially the three natures of the adult man.

It is axiomatic that something does not come out of nothing, and also that we cannot give that which we do not possess. The bearing of this upon the impregnated ovum having a degenerate line of ancestry is apparent. The conditions are the same as when the poor seed of a plant falls upon poor ground under unfavorable environment, which results, as we have seen, in the plant which is deficient in chlorophyl, and which annual plant degenerates from year to year until it disappears in three or four generations, in accordance with the laws of degeneration. Just as the plant was deficient in chlorophyl, or the life giving principle, so are the physically degenerated man and woman deficient in life force or the vital principle, or (as it is said) they have a "low vitality"; as they do not possess full life or normal vital force, they cannot transmit it to the next generation. The resultant impregnated ovum is potentially defective or degenerated, and the adult evolved from such an ovum is likewise defective or degenerated. The degree of the defect is dependent upon the relative degree of the potentiality of vital force or principle or energy received into the ovum, modified more or less by the character of the environment of the particular individual.

The nature of the force or vital energy which causes the unicellular ovum to evolve into the normal human adult is not understood, as it is life itself, the essential nature of which is unknown; we only know so much of it as can be appreciated by our senses in its manifestations. It is evident, however, that the evolution or growth of the ovum to the adult takes place according to natural or biological laws, and that a relatively unfavorable environment interferes with this evolution or growth, and results in arrested evolution or imperfect development. This arrest may take place at any period whether in the embryo, the fœtus, the child, the adolescent, or the young adult, and the result we shall designate as developmental hypoplasia—using this term as being synonymous with arrested evolution or defective development.

It is not our desire in this connection to trace the relationship between degenerate ancestry and the morbid conditions and death of the embryo or fœtus and the child.

Throughout both the evolution, or period of development, and the involution or the old age of man, degeneracy can be acquired. In other words, degeneracy may be either hereditary or acquired. In the period of evolution it results in developmental hypoplasia, or arrested development, which may be so extreme as to lead to death; and in the period of involution it hastens involution, which is another way of saying that it causes premature senility, and thus is a contributory, if not the determining, cause of the death of the individual.

The subject is so large that it will be necessary to deal with it here merely in outline, and to omit a discussion of the relative importance of heredity versus a morbid relation of the ovum to the containing womb, in causing the death, or defects, of the fœtus. If the defect in vital force or vitality of the ovum is extreme, the death of the ovum and abortion results. If less extreme there results monsters, spina bifida, cleft palate, harelip, deficient members, etc.; or an imperfectly developed fœtus; or the defect may be more manifest in a certain portion of the fœtus, and result in congenital idiocy, imbecility or dulness of intellect in the child, the microcephalic type of idiot, or person with dull intelligence.

The relationship between developmental hypoplasia and the so called nutritional diseases of infancy and childhood must be passed over for separate consideration. In this connection, reference will be made only to the manifestations of degeneracy in the school child. One type is that of the various degrees of dullness of intellect; the opposite type is the bright child with a relatively frail or feeble body—the so called neurotic child, in which the defect has been most manifest in the muscular and circulatory and other general structures of the body and less manifest in the nervous system.

The so called nervous children, that is, those having an unstable nervous system, form a group between the dull children with heavy bodies and the bright children with frail bodies. Broadly speaking, one type is that of the idiot, and the other that of the imbecile—reversions to the type probably antedating the cave man, and to that of the cave man or his successor.

Arrested evolution becomes more distinctly manifest at the period of puberty. This is more true of girls than of boys, as the evidence of puberty in girls is more apparent. The usual signs of puberty fail to appear, the body retains the form of the child, that is of the neuter, the frame does not broaden, the roundness of the body and its various members, due to the deposit of fat which characterizes the maiden, fails to develop, the pubic hair does not grow, the breasts remain undeveloped, and menstruation fails to appear. In the more marked cases the arrest of development is universal; it affects all the tissues of the body and is not merely an arrest of development of the sexual organs. It is equally true of the bones, of the muscles, of the circulatory organs, of the nervous system, and of the glandular structures. In other words there is a general developmental hypoplasia.[1] Except in those of the idiot type, its more prominent manifestation is in relative debility, nerve instability and anemia, which under these conditions is called chlorosis. The least manifestation of it is nervous instability, a relatively slender figure, and the undeveloped cervix with a small os, the so called "pinhole" os of Marion Sims, with associated dysmenorrhea of the so called nervous or ovarian type.

This group of women is relatively sterile. When they marry and do not become pregnant, frequently they worry over this personally and also worry their husbands and the doctor and develop nervous prostration as a consequence; or if they become pregnant, all of the nervous symptoms of pregnancy are exaggerated, and in labor they suffer inordinately, and tend to become exhausted; hence in this group it is usually necessary to resort to artificial delivery. Because of the imperfect development of the cervix and pelvic floor, lacerations are the rule, and in many of them puerperal infection results, which has been attributed in the past to exhaustion due to the serious labor. The forces of labor are imperfect because of the maldevelopment of the uterus, and of the nervous system, and the exhaustion has the same cause. Infection results because of relative loss of immunity with reference to the pathogenic pus producing organisms. Usually these women are much prostrated and do not make good recoveries from labor, and many of them develop nervous prostration.

It is believed that the same group is much more apt to suffer from the surgical infections than are normal individuals, because of the loss of relative immunity. Notoriously it is the group which develops postoperative infection of the urinary organs.[2]

Degenerates in whom the degree of arrested evolution is sufficient to prevent the development of the adult body form, are prone to develop tuberculosis.

The neuter type of body is slender, the curves of the vertebral column are altered, the chest is flat, the abdomen protuberant, and the muscles and ligaments are atonic.

The same group, that is, those having the neuter type of body with mypoplasia of all their tissues, develop the visceral ptoses—the so called Glenard's disease—which includes ptoses of the stomach, intestines, liver, spleen, kidneys, and pelvic organs These ptoses are due to one of two causes:

First, arrest of development in fœtal or child life which may prevent the various organs not only from reaching their full size, but also their normal position in the body; thus the kidney may be found in any position from the pelvis to the lumbar region, never having ascended as it normally should, likewise the position of the colon and the stomach may never have altered from that which is normal in the fœtus to that which is normal in the adult. Such ptoses are more properly considered as embryonal types of position; they have not dropped from a normal position, but have never assumed in the development of the individual their normal adult position.

The second cause of the visceral ptoses is the lack of tone in the tissues of the body. Owing to the alteration in the configuration of the spinal column, and to the lack of toncity in the abdominal muscles, we have an altered configuration of the abdominal cavity with loss of normal force or pressure exercised by the muscles of the abdominal and pelvic walls, which together with respiration affords, in the normal individual, a conservative influence in maintaining the position of the abdominal and pelvic organs. This force is altered and distorted and becomes more or less a destructive instead of a conservative force. The lack of tone of the tissues of the body due to hypoplasia prevents the normal supporting ligaments from giving adequate support to the various organs concerned. The resultant of these conditions is the visceral ptoses.

The influence of degeneracy upon the nervous system, which includes the brain, the intellect and the moral nature, is even more manifest than is true of the body in general.

The extreme type of inherited degeneracy of the intellect is the so called congenital idiot, and its lesser degrees are the imbecile, the person of slight intelligence, and those of dull intellect of the idiot type. One type has the microcephalic type of head, with the relatively heavy body of the idiot; the other has the neuter, or child's type of body. Mental and nervous instability, when hereditary in origin, are merely lesser degrees of degeneracy. All of these forms of intellectual degeneracy are due to hypoplasia of th nervous system.

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[1] These facts were worked out by the late Harrison Allen, M. D., and myself in 1886; when we conducted a joint study of a series of cases of delayed puberty. This study, and the invaluable instruction of myself, by Dr. Allen, as to the proper methods of studying natural phenomena, is the basis of my twenty-four years of diligent study of the subject of degeneracy. At that time Dr. Allen was the profoundest student of the morphology of arrested development. He taught me the facts he knew; and did much more, for he imbued me with his own love of truth for truth's sake—the scientific method.

[2] The statements concerning general pathology are made with due reserve, coming as they do from a gynæcologist; but those belonging to gynæcology are positively affirmed, because they are based on twenty-six years of clinical experience. The first set of statements I believe to be true, because convinced by the evidence; the second set (gynæcological) I know to be true, because I have proved them in the laboratory of the human body when diseased.

The so called functional nervous diseases, insanity epilepsy, catalepsy, hysteria, nervous instability and nervous prostration, when due to degeneracy, are other manifestations of hypoplasia of the nervous system and are due to varying degrees of hypoplasia, or imperfect development of the protoplasm of the brain, spinal cord, and nerves.

The nature of cancer is a problem only second in importance to that of tuberculosis. That cancer is due to degeneracy, or is a product of civilization, is indicated by its relative frequency in civilized man as compared with the savage, and by its increasing frequency. This induction is equally applicable whether cancer is due to a parasite or is embryonal in origin. The full blooded Guinea negress almost never has cancer of the womb, whereas, it is common in the degenerate mulatto. The frequent relation between cancer and tuberculosis in the same family is equally suggestive. The causal relation between cancer and degeneracy is merely suggested —much more study is requisite in order to demonstrate the hypothesis that cancer is a product of degeneracy.

The fact that mouse cancer is found only in animals which have been kept for generations in the bad environment of the laboratory is almost demonstrative of the true nature of cancer—arrested development of a morula cell, or a cell of the epiblast or of the hypoblast, which later, under some exciting cause, takes on growth, and makes a tumor.

Degeneracy may be acquired as well as inherited. A bad environment may arrest the development or evolution of the growing child of normal ancestry and result in developmental hypoplasia. The condition is similar, if not identical, to that when it is of hereditary origin. The acute infections, bad sanitary conditions and malnutrition the result of improper food, are among the chief causes of acquired degeneracy or arrested evolution. In the case of children and young adults this point is emphasized, in order that it shall not be inferred that developmental hypoplasia is always hereditary in origin. In the adult, the chief causes are overindulgence in food and drink, sexual excesses and overwork, in addition to those causes operative in the young.

The essential nature of developmental hypoplasia and of involutional hypoplasia is unknown and is a subject the discussion of which must be deferred, and in this connection it will merely be stated that the condition is probably due to an alteration in the nature of the protoplasm of the tissues of the body, beginning as molecular degeneration of the cells of the body, causing so called functional disease; and if progressive, from continued bad environment, leading to atrophy of the cells, and to fibrosis, or premature senility, of the structures involved.

Degeneracy which is acquired by one who has already become an adult (that is, who has fully evolved to the adult type), as is true of the individual in process of development, may affect the physical, intellectual or moral nature. It is due even more to environment than is true when degeneracy occurs in the young, and is very frequently due to the bad habits of the individual.

The law of growth or of development (Lamark) is that the part or organ or the organism as a whole must be employed, or must work, upon normal lines in order to develop or to maintain a degree of development already acquired. The lack of use, or the overuse, of a part, or of the whole, results in degeneracy; hence idleness, luxury, indulgence in the lusts of the flesh or the pleasures of the senses, on the one hand; or deprivation of the normal amount of nutriment or overwork upon the other hand, causes degeneracy either in the organism as a whole or in some of its parts. Arterial degeneration, heart disease and degenerative changes in the liver and kidneys, are some of the consequences of acquired degeneracy. Hypoplasia of a more general character is the result of chronic mulnutrition.

It is evident that just as the effect of degeneracy upon the individual in the period of growth is to arrest the evolution or development of the individual, so in the individual who has passed early adult life it has the effect of hastening his involution; or, in other words, of bringing about premature senility, and thus is a contributory cause of death.

In order that the practical bearing of the relation of degeneration to medicine may be rendered more clear, a few illustrations will be given. It was the study of the fundamental nature of delayed puberty which led me to realize that the law of degeneracy is the controlling force at the basis of many so-called diseases or morbid states, and also led me to use the term "hypoplasia" as an explanation of the status of the tissues of the degenerate.

Let us take the malpositions of the uterus from the standpoint of diagnosis and prognosis, and more particularly retropositions. These are either developmental in their origin or they are acquired, or they may be mixed. It is well known that a certain group of women having retropositions of the uterus have numerous symptoms, which have been regarded as due either to neurasthenia or to hysteria; and also certain of them have local symptoms which are direct in their nature; and they also may have certain reflex symptoms in remote portions of the body. In the past it has been said that the local and reflex symptoms are directly due to the malposition of the uterus, whereas the neurasthenic or the hysterical symptoms are due to these general so called functional nervous diseases; and it has been held that to cure the woman anatomically will cure the local morbid condition, but will not cure the hysteria or the neurasthenia. The relative accuracy of diagnosis and prognosis has depended upon the ability of the physician to differentiate between hysteria, neurasthenia, direct symptoms and reflex symptoms in the past. In the light of our knowledge of degeneracy such a case should be studied in order to determine whether the woman is a degenerate of hereditary or acquired origin, or whether she is of normal ancestry and has had a normal development, but has acquired a local disease. The family history, the history of childhood and of puberty; the body form, whether that of the adult or of the neuter; the presence or absence of the so called stigmata of degeneracy; these will determine whether or not she is a degenerate. If a degenerate, she has hypoplasia of the tissues of the body and the malposition of the uterus is merely a complication of the general state; whereas, if she has been a normal woman, she merely has a local disease. In this case, to cure the displacement of the uterus will restore her to health; whereas, if she is a degenerate, the uterus may be restored to its anatomical position, but she is still a degenerate and will suffer from its manifestations, more especially from debility, from lack of physical vigor, from a tendency to the neuroses, or from various neuroses which have developed; and in order to benefit her it will be necessary to treat her along nutritional lines, and thus to modify and improve the defective protoplasm in the cells of her body.

The same set of facts applies even more clearly to the other ptoses of the body and is the explanation of the great difference in reported results and in the expression of opinion concerning the value of the various operations for the visceral ptoses.

The length of this communication prevents a more detailed reference to the other morbid conditions, but a few words will be added as to the bearing of the theory upon the prevention of some of the evils of degeneracy. If the human family could be dealt with as is true of animals, degeneracy could be prevented by forbidding degenerates to propagate their kind. This was attempted in a modified way by the ancient Spartans. It is not for me to say that it is practicable at this period. It is evident, however, that when degenerates intermarry, their offspring require the very best environment, in order that the inevitable consequence of such heredity may be minimized. They should grow up in the country and live as near to nature as is possible. Their education should be different, and they should be discouraged or prevented from taking up indoor occupations, and should be discouraged from attempting careers involving great and continuous expenditure of nerve force. They are the unfit and are unable to withstand the vicissitudes which can be successfully withstood by the fit and the strong. They should expend no more energy than they produce, and therefore should lead "the quiet life," close to nature, in order that the income and outgo of nerve force may be equalized and that they may live, as it is called, healthful lives. The relation of these facts to public sanitation and state medicine and to the duty of the family physician in controlling or advising about the lives of the young needs only to be indicated in order that it shall appear how fruitful this field is for future development.

1509 Locust Street.

PSYCHOTHERAPY—ITS USES AND ABUSES.*

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This subject has been before the public and the profession so much of late, that it may seem unnecessary to bring it before this society. However, these very discussions have attained the purpose of removing much of the mystery from the subject and have also, by the many failures in effecting cures, made the public less credulous and those practising this form of therapy less boastful in their statements. We have possibly, therefore, arrived at a time, when the chaff can be sifted from the wheat and what is really good in the system, although perhaps very limited in its application to the treatment of disease, may be fully and truthfully stated. That there is something of value in the idea of psychotherapy, should be accepted for several reasons. First, that many show, by restored mental and physical health, that something has wrought a change in them, which they are willing to testify to, and the second, that while many irresponsible persons have assumed to treat disease by this method, who have no knowledge of disease itself, many others thoroughly trained in the study and treatment of disease have seriously employed this method.

Psychotherapy, as its name indicates, signifies mental therapeutics. Its disciples confine themselves either entirely to the psychological methods or aid the results by material help in the form of drugs, etc. It can be readily seen that such a system of medicine, when it assumes for itself a special entity apart from the school of general medicine, of which if it has any real value it should consider itself only a subsidiary part, becomes a danger to the community by its very specialism, its practitioners remaining ignorant of the vast field of practical medicine as revealed by the laboratory and hospital. This side of the question is best shown in its crudest form by the so called schools of X Science, Mental Science, and in a less flagrant way by such movements as the Emanuel movement, for the latter, while probably standing honestly on a high platform, is treading on very dangerous ground, when it assumes the care of the sick without the knowledge of sickness or disease itself, permitting those untrained in the study of the body to attempt to cure its diseases. It is hardly an answer to these objections to this system that they wish the physician to first examine and pass on their patients before they take them under their care. Practically the case does not work out that way. The patient when he once comes under the care of the Emanuel movement remains there unless some evident gross disease, as pneumonia or rheumatism, etc., prevents further treatment.

If there is need of special mental therapy, the physician should be the one to send the patient to the religious adviser, not, however, giving him up as a patient, but treating him from the physical standpoint until, in his opinion, no further treatment is necessary. In stating this view I am only stating what has always in the past been the course pursued by every intelligent physician. He has always, if successful, been a mental healer as well as a physical healer, and certainly has not undervalued the usefulness of the religious adviser when that element was considered an aid in producing a cure.

It is almost trite to say that only in functional, temporary disturbances of the body is it possible for psychotherapy to have any position as a curative agent, and yet what preposterous claims have been made by the various schools. It is a sad commentary on what we would expect from the advanced general education of the present time that we find so many anxious to flock to irregular methods of cure, rather than to trust themselves to those trained to the study, first of the body itself and later its departure from the normal procedure of functional activity. The ignorant, the superstitious, the untrained, the highly emotional, and those recognized as mentally impaired might be supposed to tend in that direction, but we find many others travelling the same road.

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*Read before the Medical Association of the Greater City of New York, October 17, 1910.

Leaving this crude side of psychotherapy, upon which I have, perhaps, dwelt too long, let us now consider the trained teacher and expositor of psychotherapy as a science founded on psychology. Here we have to take up such well defined and elaborated systems as have been worked out by Freud, Bernheim, Dubois, etc. Let us look into the two methods most prominently brought forward in this school. First those of Dubois in his book *The Psychic Treatment of Disease*. This work has been of great value to the physician. Its great danger is its positivism. Dubois does not in any way discount medical treatment. He says of the Mitchell rest cure that it is a valuable aid to treatment, but to it must be added his method of suggestion. Dejerine, in his introductory remarks to Dubois's book, speaks of his method as psychic pedagogy, i. e., reeducation of the reason. Dubois uses the term "education of the reason"—"moral orthopædics."

Like many writers Dubois is somewhat contradictory in his statements; at one time he says psychoneuroses have a material basis, at another nervous disorders are primarily psychic and that psychic disorders require psychic treatment. Dubois is opposed to the psychoanalytical plan of Freud. He keeps constantly asserting to his patient that the trouble is psychic and therefore curable. His talks take the form of saying repeatedly "You will be cured."

Freud, in his work on *Psychotherapy of Hysteria*, goes much further than the genial, kindly Dubois. He maintains that all hysteria is due to a psychic trauma, some unhappy experience, shock, death of a friend, fright, or some immoral act, especially, in his experience, of a sexual nature. He believes that this mental trauma continues its effects on the individual indefinitely. Freud considers that if the original trauma could be reproduced in all its first primal effects and if the patient could circumstantially discuss it, i. e., talk it over, the hysterical or nervous symptom would disappear. "The hysteric suffers mostly from remembrances." Often it is only when the patient is questioned in the hypnotic state that these memories appear with the undiminished vividness of fresh occurrences.

Freud terms hypnosis an artificial hysteria. These hypnoid states with all their diversities agree in that they are excluded from the associative relation of the rest of the content of consciousness. During the attack the control of the body is transferred to the hypnoid consciousness, although the normal consciousness is aware of it.

Psychotherapy cures by restoring the control of the normal consciousness, wiping out states of so called double consciousness. It does away with the effects of the original trauma by affording an outlet to the suppressed effect by speech. Freud's method is to press the patient's forehead, and either while hypnotized or otherwise urge the patient to think back on any experience which might bear on the case. Much depends on the physician and not a little on the exhaustion and submission of the patient. Even here how can any but functional or temporary nutritional disorders of the body or mind be affected by any process of reasoning or suggestion. Education, training, leading to self control in habits of life and processes of thought or reasoning, have always been the means of making men moral, self contained, persistent, etc., infusing, in other words, some strong, lasting incentive into life. What more does suggestion do, and why should it be more effective when only urged on the subconscious self, a lower automatic part of our consciousness, than when fully presented to the individual when his higher consciousness is at its full capacity of activity and receptivity?

At this place I think it is wise to refer to the term "functional disease." Can there be such a condition? It is rather a confession of our ignorance of the disease in question in its ætiology and especially its pathology. Epilepsy is one of the best illustrations of what is still classified in our books as a functional disease. Yet, while we have no positive constant pathological findings peculiar to idiopathic epilepsy, the tendency of recent study of the clinical course of the disease; its stereotyped reproduction of the seizure, always the same for years in succession, point with a sure finger to some definite material change in the nervous system as the underlying basis of the disease. We are apt to include mania and melancholia as functional psychoses due to nutritional disturbance or intoxication. Slight as may be at times the disorganization of the nerve cells in these diseases and perhaps capable of complete restoration of structure and function, they are as positively diseased as in general paresis.

Of what service can suggestion be to the latter disease or in the former unless the full powers of the conscious ego are restored? But it is this very absence of function of the consciousness which makes an hallucination or a delusion possible; it is a loss of the power of association and coordination, either in the field of memory itself, its associative tracts, or in the highest region of intellectual association or coordination. It is hard to think of such conditions of mental impairment without a physical change having taken place in their cell areas. Perhaps this has been as clearly and definitely put forward by Bolton (a contribution to the Localization of Cerebral Function, Based on the Clinicopathological Study of Mental Disease, *Brain*, 1910, xxxiii, part 129) as by any writer of the present time. If these are facts as I have related them how limited, indeed, is the field of psychotherapy! It is what a friend might do for another, if the former had full belief in the latter, or what a wise adviser or superior teacher might do by explaining the mental and emotional confusion possibly based on inexperience, ignorance, or functional disorganization. Can it do more?

If psychotherapy is carried out with full attention to the physical care of the patient, no harm can result.

Some practitioners in this school of therapy say it is not necessary to give a laxative any longer.

suggestion is sufficient. Is such a process necessary when proper food and laxatives can be so easily employed?

Obsessions of the condemnatory type, delusions of the paranoidal type, persistent phobias, from which the patient prays to be delivered and tries to deliver himself, are supposed to be the especial field in which the psychotherapeutist is eminently successful. By psychoanalysis the original thought, act, which perhaps preceded the special obsession, is searched for in the patient's mind. It is probably unknown to the patient himself, but by association may be evolved from the distant forgotten past. This may be hastened by partial hypnosis. It is supposed that the finding will relieve and does relieve the existing obsession. There is great room for deception here. That improvement often takes place in these cases cannot be denied, but it may possibly be explained by the attention given the patient, the evident interest in and desire to help manifest by the manipulator. Or again, the opportunity thus given the patient to reason out by this aid and help the mental process which has produced what is even evident to him is not the usual process of reasoning in his friends and acquaintances. He tries to analyze with this aid why he feels and thinks so differently than previously and thus, provided no permanent disorganization of cell structure has taken place, there may be recovery. This probably would have occurred in time in any case under the physician's care.

Psychotherapy, therefore, seems an unnecessary and labored process and one open to much error and fraud, and when, as often is the case, it is carried on by inexperienced persons, it results in permanent injury to the individual so treated.

19 West Fifty-second Street.

PULMONARY TUBERCULOSIS AS STUDIED IN THE GENERAL MEDICAL DISPENSARY.

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It is with considerable hesitation that the writer presents this paper, knowing that to write or to discuss the subject of tuberculosis is not infrequently interpreted as an indication that the writer or speaker considers himself a specialist in the disease. The writer can lay no claim to being a specialist, neither is he anxious to assume the title created for the first time by one of the Russian patients at the dispensary, who expressed a wish to consult the "professor of consumption." One need not, however, be a specialist to have a very keen interest in a disease so prevalent, not only in Philadelphia, but throughout the entire world.

It occurred to me that it might be of interest to give a brief résumé of the tuberculosis problem as seen at the medical dispensary. At the Jefferson Hospital we have two medical dispensaries daily and a special dispensary for tuberculous patients which is held three days weekly. The work which is here reported has been done under the direction of Dr. J. C. Wilson and Dr. H. A. Hare, through whose courtesy I am able to present it. The work consists in an investigation of the histories of those patients seen at the noon dispensary during the past six months, that is from April 16 to October 16, 1910.

During this period 1,456 patients applied for treatment. Of this number 103 were referred, after examination, to other departments for treatment as they proved not to be suffering from medical ailments. In addition to this number there were 133 patients whose statements as to their salaries were such that they were referred to their private physicians for treatment or in those instances where no physician was in attendance the patient was directed to consult one. Deducting the number of these two classes of patients we find that 1,220 individuals suffering from medical ailments were seen in the six months. Of this number 203, or slightly over sixteen per cent. of the entire number, were found to be suffering from one disease, namely, pulmonary tuberculosis. When we remember that this number is from but one dispensary and does not include those patients consulting the tuberculosis department, we see that despite all that has been done by the State as well as by the city, and in spite of numerous dispensaries which have been established to accommodate those suffering from this disease, the number that consult the general medical dispensary is still a large one. Of the 203 patients five were found to have acute pneumonic phthisis, two of this number died within eight weeks at the Philadelphia Hospital, two are known to have died at home within ten weeks of the time first seen, and one patient was lost sight of, as he gave the wrong address when his history was taken. Two of the five were females; one aged seventeen and one twenty-two; one an Italian who had been in this country but four months and one an Irish girl who had arrived in Philadelphia six weeks before the symptoms of the disease appeared. The age of the male patients was 18, 20, and 21 years respectively; one, the youngest, was an Italian, one an Austrian, and one an Irishman.

One hundred and eighty of the 203 were found to be suffering from chronic ulcerative tuberculosis, while of this number thirty-nine were recorded as being in the incipient stage. There were eighteen patients of this series who showed the signs of fibroid tuberculosis. Twenty-seven of the patients were males and seventy-six females. The ages were as follows: Forty-three were between the ages of twelve and twenty years; seventy-one were between twenty and thirty; seventy-three were between thirty and fifty; while sixteen were between fifty and seventy. The nationalities were as follows: Fifty-nine Russians, seventy were American born, fourteen Irish, thirteen Italians, thirteen were negroes, three Roumanians, two Greeks, two Swedes, two Scots, one Turk, and one Frenchman. Of the seventy-six female patients forty-four were doing their own housework when the symptoms of the disease appeared. Seven were dressmakers, ten were machine operators, eight were shop girls, two waitresses, two servants, and three had clerical positions. Thirty-nine were married, twenty-four were single, eleven were widows, and two divorced. Of the 127 male patients the occupations are as follows: Twenty-eight were tailors, sixteen machine operators, eight errand boys, four shipping clerks, eight salesman, seven school boys, three cigar makers, three grinders, three peddlers, one stone cutter, two bakers, two weavers, five textile workers, one hatter, one newsboy, and one butcher. Sixty-seven of the 127 were single men, fifty-five were married, and five were widowers.

It is our routine at the dispensary, in taking the history of the patient's illness, to first ask the chief complaint and to record this in the patient's words. A study of the histories shows that of the 203 patients seventy-nine gave cough as their chief complaint, sixty-two complained of pain in the chest, twenty-two complained of pains and distress in the stomach, and when asked to localize the pain indicated the epigastric region, seventeen complained of general body pains, sixteen of weakness, seventeen of blood spitting, thirteen of loss of weight, ten of shortness of breath, twelve of sweats, four of abdominal pain, ten of hoarseness, seven of pain in the back, four of diarrhœa, two of nervousness, and two of fever.

It is hardly necessary to state that when questioned the patients also complained of combinations of the above symptoms, but the list above gives the symptoms from which they sought relief at the hospital.

As can readily be imagined in a busy dispensary, and especially in the summer months when many of the assistants were taking their holidays, many interesting points in the histories were omitted, but it is of interest to note that among the female patients forty were asked if they were under medical care, and thirty-two of these gave the statements that they had been "going to doctors" for periods varying from three weeks to two years. Of the forty patients only three had been informed that they suffered from tuberculosis, and strange to say these three were the only patients that stated that they had been examined with their chest clothing removed. Twenty of these forty patients had been informed by their physician that they did not have tuberculosis, and in each case no examination had been made of the chest except in six patients, who stated that the examination was made without the removal of the clothing.

Of the 127 male patients the question of former medical care was investigated in seventy. Of these seventy men fifty-two gave statements that they had been under medical care until they came to the dispensary. Twenty-six stated that they visited a physician's office over twice a week, and two men stated that they went to their doctor's office twice a day to get cured quickly. Of the fifty-two patients two had been informed that they were tuberculous without having been examined, while of the remaining fifty only six gave a history of having removed their coats for the examination, and only two of the six were stripped to the skin. Of the seventy men only six admitted having been patients in any other dispensary.

Of the 203 patients at least 150 were open ulcerative cases, and although the sputum was not examined in every case, during the summer, there can be little doubt that the sputum in the majority of the patients contained large numbers of bacilli. Nuttall, of Johns Hopkins Hospital, has shown by careful investigation that the usual tuberculous sputum contains from one and a half to four and a half billion bacilli in the twenty-four hours, and remembering these figures and with the positive knowledge that ninety-eight per cent. of our series of patients had taken no precautions whatever to prevent others being infected, we can understand why the disease is prevalent.

Those of us who see these patients have little trouble in making a diagnosis after they are properly prepared for the examination, but the real difficulty comes in knowing what to do with them when you are all too sure of the diagnosis. Those who attempt to find places for the victims of this disease soon realize that only a very small percentage of those suffering from it can be taken care of in the existing hospital sanitariums for years to come, and the others must die if not taken care of at home. If with the death of the patient the trouble ended the solution would be a comparatively easy one, but we all know that before the patient dies, almost invariably, other members of the family have become infected. We have recently made an effort at the Jefferson Hospital to have all the members of a tuberculous patient's family report to the dispensary for examination. We have records of the examinations of twenty-two children from such families and twelve adults. Of the twenty-two children examined seventeen were found to be actively tuberculous, while the cervical lymph glands were enlarged in two other children who were otherwise perfectly well. Of the twelve adults who reported for examination because they had a tuberculous member in the family and who said that they felt perfectly well, eight were found to have active lesions, six of the eight having a rise of the temperature at the noon hour.

I am sure all the men who have done or are doing dispensary work will agree with me when I write that the treatment of the tuberculous patient in a medical dispensary, as usually conducted, is, if possible, worse than useless. After the diagnosis is made and treatment for the acute symptoms has been given, the patient should be turned over to a dispensary for the tuberculous, providing such dispensary offers for the patient something more than cough medicine and kind sympathetic words, invaluable as these are. To me it seems evident that such a dispensary without the aid of a trained social worker, who is also a nurse, and without enough financial support to afford to give to these poverty striken unfortunates sputum boxes and supplies of absorbent paper, are as little equipped to help the tuberculous patient as is the medical dispensary.

CONCLUSIONS.

The work at the dispensary has taught me several things. 1. In the first place, that even now after all the publicity that has been given the subject of tuberculosis the disease is not, among the people that suffer from its effects to the greatest extent, recognized until it has persisted for months, if not for years, and not until all reasonable hope for a cure has passed.

2. That the failure of the physician to diagnosti-

cate the condition is in great part due to his failing to have the patient properly prepared for examination, that is, stripped to the waist.

3. That the simple precaution of taking a temperature before pronouncing a patient free from tuberculous disease is not used by those physicians who would benefit most by its use.

4. That the same may be said of that most valuable aid to diagnosis, in chronic pulmonary conditions, auscultation during deep breathing after the patient coughs.

5. That with the rarest exceptions dispensary patients (as seen in an ordinary medical dispensary) are a danger to the health of those living with them because of their habits of life, and that all the supposed healthy members of the family should be carefully examined, and frequently reexamined.

6. That a large number of tuberculous patients for many years to come will be compelled to receive their treatment at home.

7. That the medical dispensary (unless special arrangements can be made), is a very undesirable place to treat the tuberculous patient.

8. That the essentials for a dispensary for the tuberculous have been well stated by Cabot, when he said that what was needed was (a) a physician who knows the disease thoroughly and is willing to give his time for a few hours a week to the examinations of suspected patients and the general supervision of their treatment; (b) a nurse or trained visitor, preferably a trained social worker who is also a nurse and who understands tuberculosis work, who will go to the home of the patient and see that the details of the treatment are properly carried out; (c) for the support and guidance of the undertaking, an antituberculosis association, whose members can collect between $750 and $1,000 a year.

2030 Chestnut Street.

EAR DISEASE AND ITS PREVENTION.

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The truth of the proverb that an ounce of prevention is worth a pound of cure, is nowhere more apparent than in the treatment of acute middle ear diseases; we have but to remember that thirty-five per cent. of all brain abscesses, sixty-five per cent. of all pyemias, and ten per cent. of all cases of meningitis are known to originate in the middle ear. Besides, it is estimated that over two thirds of our fellow countrymen have an aural defect of some kind, the most annoying being a discharging ear. Since nearly every aural trouble begins as an acute middle ear congestion, the assumption is that if the latter were properly treated in the beginning dangerous sequelæ would be avoided and the disease would not reach that stage of chronicity wherein cure becomes difficult or impossible.

In spite of our broader knowledge of the seriousness of acute ear complaints and in spite of the increasing recognition of the tendency of these diseases to implicate structures other than the ear, there are still many physicians who regard these affections as slight and insignificant. So much can be done at the outset of an acute ear affection to prevent its attendant dangers and inconveniences. that it is astonishing that the profession as a whole does not more generally adopt and more strongly urge preventive measures.

Neglected ears are usually the result of disease in infancy. Oftentimes parents are to blame. They look on earache in a child as a necessary accompaniment of an infant's growth, and a running ear they regard as a natural outlet for the "humors" in the head, to stop which is dangerous. This belief, no doubt, owes its origin to the danger that is known to attend the sudden cessation of an active suppuration.

The child is father of the man, and not until children's ears receive the attention they merit can we hope to have a populace with fewer aural faults than ours. In many instances a complaint that starts in infancy does not assume a troublesome aspect until adult life is reached and the hearing power is put to the test, and then it is usually too late to repair the defect. We insist to-day that children's eyes shall be regularly inspected. The necessity of removng their enlarged tonsils and adenoids is generally conceded. Their health in general is carefully looked after—everything but the ears; these are all too often neglected. When they are diseased and perhaps discharge, they are apt to be left to Nature—to be "outgrown." Nature is a stern mother, and in weeding out the unfit she destroys almost as much as she creates. She certainly does cure many a bad ear without the loss of much hearing, but the chance of such a happy outcome is too uncertain to be considered, even for a moment, in this era of prophylaxis.

The functions of the ears are conserved by keeping the nose and throat in a healthy state, and very often the effective prevention of an ear complaint is accomplished by the removal of a nasal anomaly, such as adenoids in children or a septal or turbinal disorder in adults. An acute ear trouble may be relieved by local measures alone, but a recurrence can be only avoided by removing the diseased condition that led up to it.

In civilized life an imperfect ear is a decided handicap. The demands made on the ears are so exacting that there is scarcely a department of human activity in which good hearing is not requisite. Life insurance companies have learned, through their losses, to rate individuals with faulty ears as poor risks; this, not only on account of the known peril of a discharging ear, but also because of the increased liability to accident through failure to note the approach of danger. Even in childhood a poor ear is a stumbling block. It interferes with a child's education, which is mainly acquired through the sense of hearing, and, if the deafness is marked, the child is shunned and ridiculed by its mates.

The tympanic chamber, better known as the middle ear, is not larger than a split pea, yet small as it is, it is the most useful, and at the same time the most vulnerable, space of its size in the body. The healthy middle ear is an aseptic cavity, and its mucosa—which is also its periosteum, supplying nutrition—serves to protect the ear from disease.

Sterile, and even septic, fluid has been forced into the ear through the nose without any discomfort other than a feeling of fulness, which has subsided as soon as the fluid has been drained into the Eustachian tube, through the expulsive action of the musoca. The moment, however, that the vitality of the ear becomes impaired, the mucosa loses its protective influence, and the middle ear, on account of its rich lymphatic supply, becomes a flourishing place for bacteria.

Disease germs are constant inhabitants of the nasopharynx, even in health, and in disease they multiply rapidly and menace the ear, especially in children. The ear of an infant is, perhaps, its most assailable organ, and any condition that deranges the health is apt to implicate the ear. The reason for this is, that the Eustachian tube of a child is relatively shorter than that of an adult, so that infectious matter is readily carried to the ear through such forced expiratory efforts as crying, coughing, and sneezing.

Nearly every ear disease is a secondary complaint, the result of a general infectious disease, especially measles and scarlet fever in children and grippe and pneumonia in adults. Measles comes first in frequency. The otitis of measles is not particularly dangerous to life, but it is extremely injurious to the hearing, on account of its frequent invasion of the labyrinth. Five per cent. of deaf mutism is attributed to it. Most deaf mutes are not born deaf, but become so in early life. All babies are born dumb; they learn how to speak through hearing others speak and imitating them. When, therefore, an infant loses its hearing before the faculty of speech is mastered, it naturally becomes dumb as well as deaf.

The otitis of scarlet fever is frequently a dangerous one. Its chief characteristic is the stubbornness it displays in getting well. Twenty per cent. of all discharging ears are traced to it and frequently both ears are affected.

The otitis due to grippe is perhaps the most troublesome form we have to contend with. Very often it develops suddenly, with severe deafness and sharp pain. Hearing tests with the tuning forks show diminished conduction, both by air and bone —an evidence of internal ear implication, and a circumstance that adds to the gravity of the complaint and frequently interferes with the return of the hearing. As the years roll by, the grippe ear increases in frequency, probably because we are becoming more and more enervated by our artificial ways of living. As a rule, in the course of a general infection, the ear does not become diseased until the second week, when the fever is declining and the relaxed bloodvessels are pouring out their exudate, the vitality is then low and the resistance is poor.

Surf bathing is a common source of ear trouble in summer, both from the impact of the cold water upon the drumhead and from snuffing the water up through the nose. Of late many middle ear diseases are being produced by the indiscriminate use of the nasal douche. Perhaps none of the physicians who prescribe the douche are aware of the harm it can do when the nasal passages are obstructed—precisely the condition the douche is given for. When the nose is blocked the douching fluid is apt to be drawn up into the ear with a deep inspiration, carrying with it infectious matter from the nasopharynx. This is the cause of the frequent earaches among many douche users. These repeated earaches, like those that accompany severe colds, produce structural changes which often lead to progressive catarrhal deafness.

Recurring attacks of earache in a child suggest an obstructive disorder in the upper air passages, probably adenoids and large tonsils.

In all acute infectious diseases the mucosa of the middle ear undergoes the same inflammatory changes that the mucosa of the nose and throat does. Ordinarily the inflammatory exudate from the middle ear escapes by way of the Eustachian tube. When, however, the mucosa of the tube is unduly swollen, the fluid is dammed up behind it, and, accumulating, soon fills the tympanic chamber and the mastoid cells. It is the pressure of the imprisoned fluid upon the sensitive drumhead that constitutes earache. In infants the drumhead is so thin that it soon yields to pressure and ruptures. This is a fortunate provision, for the roof of the tympanic cavity of a babe, which separates it from the brain, is but a thin shell of bone, often absent, and this is easily eroded by an infectious excretion. In adults and in children whose drumheads are scarred from previous ear troubles, the drumhead is firm and resisting and the earache lasts longer.

An earache should always be given serious attention. We must bear in mind that we are dealing with an infection near the brain which may assume alarming proportions at any moment. If the symptoms are slight and the patient is strong we can attempt to abort the infection by rest, hot applications, fluid diet, a laxative, and possibly a single dose of morphine to ensure comfort—more than one dose masks the symptoms. Frequent irrigations with a warm bichloride solution, 1 in 5,000, are usually helpful and soothing. The familiar practice of putting an onion, an oil, or even a tincture, into the ear should be discouraged as being unscientific, uncleanly, and often harmful. Even leeching and putting carbolic acid and glycerin into the ear are of doubtful value.

Under no condition should the suffering be allowed to last longer than twenty-four hours without surgical intervention. In this disease more than in any other, conservative measures are fraught with danger, and to wait is to lose valuable time. An infected ear should be treated in precisely the same way that a septic formation elsewhere is treated. It is a serious mistake to wait for the drumhead to rupture or for a mastoid abscess to become mature, for in so doing the life of the patient is placed in jeopardy. In spontaenous perforation much of the drumhead is sacrificed; the opening is ragged and imperfect and frequently requires to be enlarged for better drainage. We can never incise a drumhead too soon, provided, of course, that the operation is done with the strictest cleanliness, lest a mild infection be converted into a severe one from without. No operation in the category of surgery gives such great relief as a timely and free paracentesis. To puncture the drum is insufficient and unsurgical. The incision, preferably under anæsthesia, should extend from the distended drumhead into the periosteum of the canal wall, and perhaps through Shrapnell's membrane. This—the internal Wilde's incision—depletes the inflamed area, besides draining it and promoting repair. We must not expect always to get pus on opening the drumhead. At first the discharge is apt to be serous and scanty, in a few hours becoming profuse and mucopurulent. Generally the pain ceases the moment the middle ear is drained, the symptoms diminishing in proportion as the discharge increases. Occasionally a patient fails to improve after the paracentesis—an indication that infectious matter is locked up somewhere, usually in the mastoid cells. In infants mastoiditis occurs in a surprisingly short time after the ear becomes infected. It often produces the periosteal swelling behind the ear so common in young children, for the relief of which Wilde's incision was devised. This procedure is now obsolete, having been superseded by the more thorough open mastoid operation.

In mastoiditis there is tenderness on pressure over one or more of four points: over the mastoid antrum, the mastoid tip, the posterior canal wall, and the emissary vein. It is well to compare the tenderness of the diseased ear with that of the sound one. In the aged, owing to the density of the bone, tenderness is blunted, and in young children tenderness is an unreliable symptom, because a sick baby will cry out if any part of its body is touched.

The only way to ascertain the condition of the middle ear is by using the ear speculum. In refractory children this is difficult to do and requires skill and patience. Sometimes an inflamed and distended drumhead or a sagging canal wall is hidden from view by a layer of white exfoliated epithelium. This is apt to deceive those not skilled in ear work and to cause them to look elsewhere for the trouble, until the discharging ear reveals the source of the inflammation.

If the incision of the drumhead fails to cure the infection, the open mastoid operation should be performed without delay and before the patient becomes too weak. The advantages of an early operation are that it saves the hearing and checks the progress of the disease.

The severity of a middle ear infection is governed largely by the virulence of the infecting medium and the vital power of the patient. In this connection it is often helpful to ascertain the nature of the infecting organism by microscopical examination. Most every disease germ has been found in the ear, but those usually encountered are the staphylococcus, the diplococcus of pneumonia, and the streptococcus. If the staphylococcus predominates, we know that the infection is a slight one and that temporizing measures can be employed. The predominance of one of the other organisms shows a severe infection and one that calls for speedy relief.

The daily blood count is frequently of great assistance in these cases. Normally the general leucocyte count is approximately 8,000, and the polynuclear percentage sixty-seven. A high leucocytosis, say 12,000, means inflammation with good resistance. A high polynuclear percentage, say eighty-five points to an active septic process. When these two conditions coexist, it represents a severe infection with sufficient resistance to neutralize its toxicity. An increasing polynuclear percentage, accompanied by a low leucocytosis, say 4,000, is evidence of increasing suppuration and diminishing resistance—a bad sign. A lessening polynuclear percentage, with a decreasing leucocytosis, signifies that the morbid process is under control and is clearing up—this is what we should expect to find when the mastoid cells have been opened up. If, after the operation, however, the polynuclears fail to diminish in number, it is proof that the infection has not been completely eradicated and that a more extensive operation is called for.

237 Lexington Avenue.

THE PREVENTION OF ABORTION.*

By Charles Rosewater, M. D.,
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By the term abortion is usually meant the expulsion of the ovum from the uterus during the first six months of pregnancy, in other words, at a time when the fœtus cannot maintain its existence separate from the mother. Strictly speaking we designate as abortion the expulsion of the ovum during the first three months of pregnancy, while we designate as miscarriage its expulsion during the fourth, fifth, or sixth month. This distinction has been made for definite reasons, for during the first three months the phenomena accompanying the expulsion of the ovum are very different from those occurring during the fourth, fifth, and sixth months. During the first three months in a case of spontaneous abortion the ovum is expelled *in toto,* the ovisac being unruptured, these phenomena being preceded by general malaise, chills, backache, hæmorrhage, pains, and dilatation of the os. During the second three months' period by which time a separate placenta has been formed a miscarriage usually starts with hæmorrhage, rupture of the ovisac, and expulsion of the fœtus, while the membranes and placenta are expelled later on, considerable time and hæmorrhage intervening between the two. The latter is also the most frequent sequence of events in induced abortions.

It is not my purpose to discuss the diagnosis of pregnancy here as this would take too much time and divert attention too far from the primary object of this paper. It is to be presupposed that the diagnosis has been made or is being made early in the attendance on the case.

Abortions, as we see them, may be divided primarily into three main divisions: Those criminally induced; those accidentally induced, or accidentally occurring; those induced for therapeutic purposes.

Let us begin by giving our attention to the first division, the criminal abortion.

Abortion is the result of a crime where it is brought on intentionally by premeditated or prearranged acts on the part of physician, patient, or attendant, except when done by two or more reputable physicians for therapeutic purposes. Of course mistakes will happen in the best regulated families, but such intentional mistakes should not be countenanced, and when they occur repeatedly they show gross carelessness, or criminal intent on the part of patient or physician, and should be so recognized by law and punished. Just how to go about the correction of these evils is a problem difficult to solve. It can only be accomplished by the concerted action of the entire profession acting as a unit and lending its moral and material support to the enforcement of laws already existing on our statute books, and to the enactment of such other laws and regulations as may be found necessary to aid in stamping out or reducing to a minimum this nefarious and widely spread practice which threatens not only our own nation but nearly all civilized nations of to-day.

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*Read at a meeting of the Omaha-Douglas County Medical Association, on October 11, 1910.

By putting the ban of condemnation upon all who are guilty of these crimes we may materially reduce the frequency of the crime itself.

But we must go farther and strike at the root of the evil. We must so instruct our patients that they will realize that they are committing a crime every time they are submitting to these practices, that the fœtal lives *in utero* have as much right to existence as those born into the world, and that the destruction of these lives, whether *in utero* or extra uterum, is murder, and will be punished as a crime. We must emphasize the fact that many a woman by submitting to the induction of abortion has laid the foundation for a life of misery and invalidism, and thus brought on her own punishment. Women must be made to understand that child bearing when properly supervised and conducted, being a physiological process, does not ruin a woman's health. On the contrary many of our fairest and best examples of healthy robust women are those who have raised large families. More often, in fact, almost universally, it is the sterile ones, or those with small families, who fill the physicians' offices and apply to the hospitals for relief for local troubles originating in some previously induced abortion.

Child birth at or near term is not nearly so often to blame for these pathological conditions as are interrupted pregnancies in the earlier months.

Pregnancy is interrupted during the first six months frequently from causes for which neither physician nor patient is responsible. Disease of the genitals, acute exanthemata, fevers, constitutional conditions resulting in the death of the fœtus, injuries through a fall or otherwise, all may lead to abortion or miscarriage by impairing the vitality of the ovum and causing its death, separation, and expulsion.

The causes of abortion may be external or internal, according as the factor producing it is force or agencies acting from without, or agencies acting from within the patient's organism.

The external causes include injuries from blows, dancing, jumping, motoring, jolting, falling, the introduction of instruments into the uterus, whether intentional or accidental. To this class also belong the cases in which the performance of some operation on the pregnant woman, especially one on the pelvic organs, results in abortion. Another class of external causes includes the poisons, ecbolics, or abortefacients, taken or given accidentally or with intent. To this class of agents belong tanzy, rue, savine, pennyroyal, ergot, apiol, pilocarpus, picrotoxin, aloes, colocynth, and hydragogue cathartics.

Among the internal causes may be included displacements, endometritis, metritis, peritonitis, syphilis, fevers, the exanthemata, pneumonia, cervical lacerations, and tumors. There is also a class of patients who, having aborted once from some cause known or unknown, abort again, each time at about the same stage of pregnancy, thus developing what is known as habitual abortion. These cases are usually traceable to some local uterine disease, or to some constitutional dyscrasia, but in many instances the cause remains a mystery to the physician through unwillingness of the patient to reveal all the facts or her distortion of these facts by misrepresentation, so as to mislead and confuse him and shield her own crime. In these cases the physician should always be guided rather by objective symptoms than by the patient's statements.

The prevention of abortion involves taking into consideration all these facts and conditions, ascertaining what are the dominant features and causes in a given case and correcting them by the application of such therapeutic measures as may be indicated.

While doing so one must remember never to introduce an instrument into the uterus beyond the internal os where pregnancy is suspected, and when other uterine or vaginal treatment is administered in these cases to give such uterine sedatives as will subdue and remove the irritation otherwise resulting from the local manipulation.

Displacements of the pregnant uterus should be rectified by the simplest and least irritating method available, and if more complicated and harsher methods seem necessary they should be carried out with the patient anæsthetized, so as to reduce to a minimum the irritation.

The pregnant uterus is a strange organ, sometimes reacting by expelling its contents on the slightest provocation, while in other instances serious accidents may occur without any bad consequences.

For example:

Case I. A woman whose husband had been syphilitic only three years before was thrown from her carriage, striking on her head and sustaining concussion of the brain with a severe scalp wound, but the three months pregnancy was not interrupted, and she carried her child to full term at which time it was born alive and without blemish, and is still surviving, three years old.

The continuance of pregnancy is sometimes threatened by the occurrence of vomiting, which at times becomes obstinate and uncontrollable. In these cases the cause should be ascertained. With the exception of those rare cases in which this complication is due to some serious intercurrent disease, such as incarcerated hernia, intussusception, nephritis, or appendicitis, the aggravated forms of vomiting of pregnancy are due either to intestinal toxæmia or to some local disease of the genitals or some removable condition such as cervical catarrh, endometritis decidualis with retention of the secretions between the membranes and uterine wall.

Displacements are also frequently to blame for these aggravated forms. In all these cases local treatment carefully conducted and combined with the administration of viburnum as a uterine sedative will overcome the trouble and remove the tendency to abort. The retrodisplacements can often be rectified by the daily assumption of the knee chest position and the filling of the rectum with hot salt water while in this position. A normal salt solution is much less irritating than pure water. If not immediately successful I have met with success in such cases after a week or ten days persistence in this treatment, being usually then able to replace the uterus and support it by a suitable pessary which is worn to the middle or at most to the end of the fourth month, at which time the uterus will maintain itself in normal position without the support. Such patients should remain as quiet as possible and be warned particularly not to take any of the before named ecbolics, such as aloes, colocynth, etc., which are taken often without any thought or knowledge of their dangerous nature.

In these cases and others the drainage of the uterine cavity having been poor there is stasis with a tendency to congestion of the endometrium and oversensitiveness, so that it does not require much additional irritation to bring on hæmorrhage, separation of the ovum, and abortion.

CASE II. Two years ago a woman applied to me for treatment for sterility due to endometritis and retroflection of the uterus. After a short course of treatment I succeeded in replacing the uterus and soon thereafter pregnancy set in. I warned her about the use of strong physics, especially mentioning aloes and some others, but was called to her bedside several weeks later to find her aborting as the result of having taken aloes accidentally.

CASE III. I was called to a distant city to a woman three months pregnant with obstinate vomiting and inability to retain any food in the stomach. There was no displacement, no intestinal or kidney disease, but a general hyperæsthetic condition of the pelvic organs. Temperature, 103.6° F.; pulse, 110 I used rectal feeding, and morphine with fluid extract of viburnum to reduce the irritability. When after twelve hours the vomiting had subsided I began feeding teaspoonful doses of ice cream and champagne alternately every hour. In three days I was informed that the temperature had fallen to normal, the nausea had not returned, the tenderness was greatly reduced, and the patient convalescent. She passed through the remainder of pregnancy normally, and was delivered at term of a healthy living boy.

CASE IV. A number of years ago I had a case of uncontrollable vomiting where dilatation of the os under anæsthesia was followed by cessation of the vomiting and the further attempt to abort this patient was stopped and the child saved. Abortion in this case would have been an unjustifiable procedure, especially when one sees the further progress of the case. She went on to full term and the child and mother are both living to-day. I mention this case particularly to correct any false impression I may have made at the time I reported it to this society in November, 1905. It shows how easily we may fall into grave error and how cautious we ought to be in the selection of our modes of treatment.

In the light of further observation and study I do not believe that uncontrollable vomiting ever justifies the resort to abortion, unless due to some incurable complication such as progressive nephritis, brain disease, or some serious organic incurable disease. It is well to remember also that the vomiting of pregnancy, even in severe cases, abates or ceases entirely toward the middle of the fifth month, and that by tiding the patient over to this period the resort to harsher measures may become unnecessary. Especially should this be thought of where the question of the induction of abortion enters into play.

Abortion as a therapeutic agent should be the very last resort, and only induced when two or more reputable physicians after exhaustion of all other remedial resources have decided that the patient's life can be saved in no other way. Even then if it is possible to carry the patient on to the seventh month or beyond to give the fœtus a chance of survival it should be done. The bible says: "In a multitude of counsel there is safety." If there is any one field in which this is more true than in any other it is the field occupied by the subject now under discusion.

Another point. Under what conditions can we check an abortion already in progress? As long as the os is closed or is only slightly open we should attempt to check the process. When the patient cooperates with the physician many of these cases can be saved. When she wills it otherwise it is next to impossible to get such results even with the best of treatment.

If the fœtus has not presented through the open os or in the cervical canal, and we can check the pains we may thereby stop the further separation of the ovum. Absolute rest on the back with ⅛ grain of morphine and ½ drachm of fluid extract of viburnum every two hours until the pains cease. After this the patient must remain on her back one or two weeks and do no house work until six weeks have passed. Even then the patient must rest in bed for a day or two at each time when the menses would recur were she not pregnant.

In some of these cases in which the hæmorrhages have occurred without the interruption of pregnancy, I have followed with excellent results the advice of Jenks, of Detroit, who gave twenty grains of potassium chlorate, freely diluted, three times a day to supply an additional quantity of oxygen. Each hæmorrhage means an additional area of placenta separated from the uterine surface, so that the area of contact between uterus and placenta is diminished by this and by the clotting of blood in the placenta itself. Potassium chlorate furnishes additional oxygen and thus supplies the deficiency produced by the already named pathological condition.

CASE V. Some time ago I was called to attend a woman, mother of two children, on account of a sudden uterine hæmorrhage occurring in the night. She was three months pregnant and while sleeping with her five year old daughter was kicked in the abdomen during her sleep by the latter. Hæmorrhage ensued, but no pains. I packed the vagina with aseptic gauze, ordered absolute bed rest for two weeks and gave morphine with fluid extract of viburnum. At the end of a week she arose to attend to her household duties, but was taken with another hæmorrhage. This time I repeated the former treatment, but insisted upon longer bed rest. After two weeks of rest and quiet she again attempted to walk around with the result that the hæmorrhage recurred. Again packing the vagina and giving the same uterine sedative, I ordered her to keep to her bed until after the fifth month had passed. After a few days I gave twenty grains of potassium chlorate with a drachm of fluid extract of viburnum in water, three times a day, for several weeks. She carried the child to full term and had a very easy short uncomplicated labor. The child and mother are both alive.

When potassium chlorate is thus given great care should be exercised that there be no kidney disease present, as it is not well borne in nephritic conditions.

Summary: Cases of criminal abortion should be dealt with cautiously, yet firmly. Cautiously so that innocent parties are not accused, otherwise irreparable damage may be done them. Firmness is required where the evidence of guilt is positive, and in these cases the laws should be invoked that the guilty parties may be punished.

Publication of all cases of abortion, miscarriage, or premature labor has been advocated by some as a good measure to hold this nefarious practice in check. By this means the origin of these cases can be traced and those known to be regular abortionists should have their licenses revoked.

Impending abortion or miscarriage can be checked only by insistence on absolute bed rest, the use of uterine sedatives, and the avoidance of all local instrumentation. If, however, the fœtus is already presenting in the widely opened os the abortion is inevitable and can no longer be checked.

In order to prevent abortion physicians should also be careful to teach their pregnant patients the hygiene of pregnancy, the care of the body, the necessity of avoiding violent exercise of all sorts, such as dancing, horseback riding, automobiling, jumping, or running. Tight lacing should be avoided. From the time pregnancy sets in all sexual intercourse should be prohibited. The patient should be made to understand that upon the proper supervision of pregnancy all through its course very much depends, not only as regards her health, but also as regards that of the offspring, and she should especially be impressed with the importance of immediately seeking her physician's counsel when a disturbance of the natural course of things occurs.

Women should be instructed as to the dangers of interfering with nature, and that such interference in pregnancy is followed nearly always by impairment of health. Physicians should be careful not to introduce a sound, or any other instrument, into the uterus where pregnancy may possibly exist. Operations on the genitals or pelvic and abdominal organs should be avoided during pregnancy unless they are done for the saving of life, cannot be postponed, or are done for the purpose of removing conditions which would render the childbirth more hazardous. In some of these cases a delicate and accurate balance of judgment is necessary to do what is best for the case.

In treating all gynæcological cases careful and repeated examinations should be made in order to avoid mistakes in diagnosis before treatment is instituted. Such mistakes where pregnancy exists may lead to the slaughter of the innocent and bring discredit if not disgrace to the physician.

222 BEE BUILDING.

REMOVAL OF THE FAUCIAL TONSILS FOLLOWED BY BASEDOW'S DISEASE.

Have We a Right to Say: "Post hoc, ergo propter hoc"?

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As reported by Kuhnt at the first international congress of rhinolaryngology held in Vienna in 1908, there exists a series of communications by B. Fraenkel, Musehold, Hopmann, Spencer Watson, Scanes Spicer, Moritz Schmidt, Tilley, Creswell Baber, etc., which show cures or improvements of Basedow's disease consequent upon nasal operations. Arslan describes ten cases in which, according to him, the cause was adenoid vegetations. In five cases, the removal of the adenoids was followed by a complete cure. In the two cases of Holz, the same operation caused a bilateral exophthalmia to disappear. In one of these cases there was a recurrence of the adenoids and, at the same time, of the exophthalmia, rendering a second operation necessary. In the second case, besides the adenoids, there was an hypertrophy of both faucial tonsils. The double tonsillotomy had no effect upon the exophthalmia, which disappeared, however, in fourteen days after the adenotomy. The explanation of this fact is difficult to find, and Kuhnt believes that the hypothesis is perhaps correct according to which there would seem to exist, besides the thyreoid gland, still other organs, as for example the pharyngeal tonsil, whose physiological function would change in such a manner as to produce pathogenic or toxic substances which enter the circulation, or substances which do not neutralize poisons existing in the blood.

Does the blood examination in Basedow's disease not show a perturbed condition in the lymphatic and hæmopoietic organs? According to Kocher,[1] the leucocyte count shows a very great diminution, often in the proportion of fifty per cent. and more. This diminution affects exclusively the polynuclears. The lymphocytes are increased in the proportion of twenty to fifty per cent.

CASE. I had the occasion to observe the case of a young lady, twenty-eight years old, who consulted me for repeated sore throats. I found enlarged tonsils, but no adenoids. Her general health was good, and she presented none of the symptoms which I observed later. Attributing the repeated sore throats to the enlarged tonsils, I proposed a double tonsillotomy. The operation was agreed to and performed in June, 1908. Both tonsils were removed as completely as possible by means of Hartmann's double punch forceps. Four or five months later, the patient began to lose weight and strength and noticed a gradual enlargement of the thyreoid gland. Then appeared gastric disturbances, palpitations, tachycardia (110 to 120 pulsations a minute), trembling of the fingers, etc. She had no affection of the genital organs. The case was therefore a typical Basedow, the only symptom wanting being the exophthalmia. Patient went to Switzerland for a rest, was given massage and electricity, and returned improved as far as the general and local symptoms were concerned, the thyreoid gland was smaller, the tachycardia persisting, however (110 pulsations).

It is impossible to say that there exists a causal relation between the removal of the tonsils in this case and the symptoms of Basedow which followed, but if this relation really exists, its pathogenesis will be difficult to explain, especially as pathologists do not agree as to the cause of Basedow's disease, some considering it as a primary secretory disease of the thyreoid gland, others attributing it to a disturbance of the nervous system. Could it be possible that the surgical shock and the traumatism of the terminal filaments of the sympathetic or other nerves in the tonsils produce Basedow's diseases in a person predisposed to that affection? It is also quite possible that the repeated throat symptoms presented by this patient may have been forerunners of the Basedow's symptoms. The general practitioners or the neurologists, who see more Basedow's than the laryngologist, will have to tell us if in the anamnesis there frequently exists a history of repeated sore throats or amygdalitis. The infectious or rheumatic theory may thus gain ground. Recent publications have shown that rheumatism is capable of producing lesions of the thyreoid gland resulting in Basedow's disease, or, more exceptionally, to glandular insufficiency, or hypothyreoidism.[2] If rheumatism is frequent in patients affected with goître, it will not surprise any one to hear that faucial angina, so frequent in rheumatism, is also frequent in the beginning of Basedow's disease.

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[1] Kocher. British Medical Association, London, July 22-30, 1910, Surgical Treatment of Exophthalmic Goitre.

65 RUE DE MIROMESNIL.

LIQUID AIR AND CARBONIC ACID SNOW.

*Therapeutic Results Obtained by the Dermatologist.**

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There have been written, by a number of dermatologists, during the past few years, articles upon the uses and results obtained by treating certain lesions of the skin with either liquid air or carbonic acid snow. The first was Dr. A. Campbell White, of New York, who, in 1899, published reports and results of his work with liquid air. Later Dr. George T. Jackson, professor of dermatology, College of Physicians and Surgeons, Columbia University, Dr. H. H. Whitehouse, of New York, Dr. W. S. Gottheil, of New York, Dr. W. A. Pusey, of Chicago, and many others have given their experiences with liquid air, and carbonic acid snow.

Dr. Charles T. Dade, of New York, was the first to heroically apply liquid air, and the result was a surprise, but it broadened the field of possibilities for liquid air and increased its therapeutic value seventy-five per cent., and later suggested carbonic acid snow as a substitute for liquid air.

In the year 1905 Dr. Charles T. Dade was demonstrating liquid air before a meeting of the American Dermatological Association in New York. Dr. W. A. Pusey, of Chicago, saw that demonstration. and carbonic acid snow was suggested to his mind and later applied therapeutically by him in place of liquid air, hence to Dr. Pusey do we owe the suggestion for obtaining and using carbonic acid snow.

Air, it was found on experiment, became liquid at —140° C., or —220° F., under a pressure of thirty-nine atmospheres, but if the temperature is lowered beyond this, it requires less pressure to liquefy. Dewar, of England, in 1877 first liquefied air. Dr. Charles E. Tripler, of New York, in 1893 liquefied air, as follows:

First the air is cleaned, and free from moisture; then a compression of 100 lbs. to each square inch is obtained; this air is cooled by a water jacket. It is then compressed to 1,000 lbs. to each square inch, and cooled as before by water coil; and lastly a pressure of 2,500 lbs. is obtained; again cooled by the water coil. From here the compressed air is passed into what is termed the liquefier, which consists of a copper coil having many minute openings, the whole jacketed with nonconducting heat material, and supplied with a stop cock at the bottom. which allows drawing off the liquid. Now the pressure within the coil is about fifteen atmospheres and within the jacketed liquefier only one atmosphere, hence the compressed air escaping through the minute openings in the coil expands, producing intense cold, and the result is that two thirds escapes as air, and the remaining one third becomes liquid. which is easily drawn off through the stopcock below. This liquefied air is collected and kept in a Dewar bulb, which is a glass bulb within a glass bulb, a vacuum between the two, the inner bulb coated with quicksilver, and the whole protected by a felt jacket; or the thermos bottle can be substituted for the bulb, both being made on the same principle. Care should be taken not to cork tightly either the bulb or the bottle, for it would result in the destruction of either, due to expansion; a light plug of cotton is all that is necessary, which allows for the free evaporation of the liquid.

Liquid air is seventy-seven parts nitrogen and twenty-three parts oxygen, with a trace of carbon dioxide. It is intensely cold, — 252° C., a very pale. bluish color, odorless, and a thin vapor arising from its surface; if agitated, it has the appearance of boiling; when thrown upon the floor, evaporation is almost instantaneous, sputtering like water thrown upon a hot stove. A quart of the liquid. when not unduly agitated, will keep for four or five days.

Carbonic acid snow is made from carbonic acid gas, a gaseous compound of oxygen and carbon. made by the action of hydrochloric acid on calcium carbonate, and purified by a potassium permanganate solution. It is collected and kept in steel cylinders which are familiar to all; or the natural carbonic acid gas can be used, collected and sold in similar cylinders.

The method of collecting the snow is as follows: The cylinder of gas is placed at an angle of about 45°, valve at the lower end. A piece of chamois or dry towel is fastened to the escape valve of the cylinder in the form of a small bag. The gas is allowed to escape slowly into this bag, and the result is, from the expanding gas and accompanying moisture, a pure white snow which can be easily moulded into any size or form desired; or, having secured a good, solid column of the snow, it can very readily be whittled to the required size. The temperature of this snow is about —78° C. The Mayo brothers, of Rochester, have found that mixing this snow with either ether or chloroform reduces the temperature by about 30° C. more, so the resulting freezing mixture is one third as cold as the liquid air.

Liquid air was first used in the form of a spray. but later study and experiment proved more heroic application was necessary to secure the desired and beneficial results. Now, the air is applied with a cotton swab of any size desired, wet with the liquid and applied to the lesion, with a fair amount of pressure, and of from ten to twenty seconds in time both depending upon the amount of reaction desired, for greater pressure and longer application cause more marked reaction, and consequent destruction of tissue. The result of an application is instantaneous freezing,—a pearly white and solid frozen surface. This gradually thaws, in a few seconds to a minute, according as the application has been short or long. After freezing, the part treated quickly assumes its former appearance, except for a slight redness, but within a few hours, swelling and redness of the surrounding tissues, and at the site of application a tense bulla will form, which is allowed to dry and form a firm crust. The swelling gradually subsides in a day or two, any discharge of serum from the bulla being controlled by a dusting powder, thymoliodide in full strength, or from twenty-five to fifty per cent. strength makes an excellent control, the idea being to disturb as little as possible the original crust, allowing healing to proceed quickly. In about two weeks when healing is complete, the crust falls off, and a smooth pink scar results. After several weeks the pink color gradually fades away with the final smooth white scar, which blends with the surrounding tissues, and a cosmetic effect, which is unsurpassed, is obtained.

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[2] Weill et Mouriquand. Rhumatisme chez les goitreux, *Presse médicale*, December 18, 1909.

*Read before the New Haven Medical Society, April, 1910.

In using the carbonic snow and ether, having obtained a firm column of the snow, shape it to the desired size with a sharp knife. The snow is moistened with ether and then applied with considerable pressure, and about twice to three times as long as with liquid air; its action being slower, due to the fact that the snow is only about one third as cold as the air. Practically the same process follows after using the snow as after liquid air. The part is solidly frozen, thaws quickly, with slight redness, followed by swelling of the surrounding parts, and if the application has not been very long, a bulla appears at the site of application. A longer application results in more of a dry eschar. In both cases the crust is allowed to form, and healing takes place as after liquid air, and with practically the same results in every way.

The pathological changes resulting from this freezing are an obliterating endarteritis, a dry gangrene following, and the consequent destruction of the tissues desired. With liquid air care must be taken not to make too long an application, for there is danger of causing a greater amount of inflammation and destruction of tissue than desired. With the snow there does not seem to be the same care and caution necessary. The skillful use of the air or snow is obtained by practice, the length of time and the amount of pressure for each application for each individual lesion comes from treating many, the application being made in a general way as stated.

As to the amount of pain resulting from their use, the testimony varies with each individual, and of the two, they will all agree liquid air causes less pain and is preferred every time, where they have had the opportunity to judge, both having been used. The pain resulting on the immediate application is of a burning nature; later when the part thaws, it is a stinging flushed feeling, and lasts from one to several hours, or until the bulla forms; after that there is practically no pain or soreness, no discomfort of any kind.

As to the comparison of liquid air and carbonic acid snow, in every respect, where the opportunity of using both has been given, there is no hesitancy in saying liquid air is far preferable, and because it is almost impossible to secure the air, and the carbonic snow is so easily obtained, is our only excuse for using the snow so generally.

The cases most advantageously treated are vascular nævi. The so called port wine marks are not as favorable cases, as nævi, cavernous in character, pigmented nævi, light or dark, with or without hairs, yield to the applications. Lupus erythematosus carefully and persistently treated will be cured. Epithelioma of the skin, the more recent the growth, the greater our chances of a permanent cure. Epitheliomata of the lip yield marvelously to the applications, but how permanent the cure remains for future observation. Tuberculosis verrucosis cutis, verruca, and similar superficial growths are all favorable cases for treatment.

In the past treatment of these diseases with caustics (nitric, carbolic, or trichloracetic acids), electrolysis, curette, excision, etc., by the dermatologist has been so many times disappointing that anything new is hailed with delight, and especially so as our experience has been that success beyond expectations crowns our efforts in relieving the sufferers of these disfiguring and malicious growths.

839 MYRTLE AVENUE.

THE DISLOCATED PUERPERAL UTERUS.

Its Frequency, and Its Relation to Sapræmic Intoxication, with Some Suggestions as to Its Relief.

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At the close of labor the fundus uteri is midway between the umbilicus and the pubes, but it soon rises to the level of the navel or a trifle above, and, as involution progresses, is found at successively lower levels, until by the eleventh or twelfth day it is on a level with or a little below the pubes. The size of the uterus is such that at any time from the close of labor until, at least, the seventh day it cannot pass largely or completely into the pelvis without being subjected to uncomfortable pressure, or without pressing injuriously upon the other intrapelvic contents.

In primiparæ with relatively large pelves, in multiparæ with relaxed abdominal parietes, relaxed pelvic outlet, and overstretched uterine supports, the uterus may be readily forced into the pelvis by such straining efforts as vomiting, coughing, the frequent defæcation of hypercatharsis, especially in upright position over the chamber vessel, too early getting up, etc.

When such descent of the uterus occurs, more or less impaction of the organ is liable to take place; alarming hæmorrhage may result; the circulation through the uterus is impeded; œdema ensues, increasing the impaction; the flabby cervix, and often the lower uterine segment, is acutely flexed upon the rounded ball of the uterine body, occluding the cervical canal, and obstructing the flow of the lochia; distressing after pains occur, with tender abdomen, and weight and bearing down in the pelvis; the patient is excessively nervous, has headache, and within a few hours, if unrelieved, has a rising temperature, from the inadequate drainage of the uterus. Hirst, in the fourth edition of his *Textbook of Obstetrics*, part v, chapter i, p. 634, in speaking of these dislocations in their relation to puerperal hæmorrhages says: "Occasionally, if the dislocation occurs acutely, it may be associated with grave symptoms, as intense pain, a condition verging on shock, and high fever, these symptoms disappearing immediately upon the reposition of the womb."

That these dislocations and impactions are of much more frequent occurrence than is generally supposed, and that they give rise to a train of symptoms frequently met with, but improperly ascribed to other causes, is the conviction of the present writer.

Agonizing after pains which have lasted for hours, and which have been abated, but not relieved by morphine and other anodynes, have yielded as if by magic after placing a hand on either side of the uterus, lifting it gently out of the pelvis, and supporting it by roller compresses placed in the groins and under the binder.

Often, on the second or third day, after a normal labor, in a clean case, and with an empty uterus, one finds a nervous, worried patient, suffering intensely from after pains, with suppressed lochia, headache, and loss of appetite. The thermometer shows fever. This patient was well until after she sat up over the chamber vessel in response to a cathartic given the day before, or for some other reason assumed the upright position. An examination will show that the uterus is below the normal level, and that the cervix is angulated so closely as to obstruct the lochial flow. If this condition is not remedied at once, one of two things will happen: The woman will have a run of fever lasting for several days, a week usually, with recovery due to spontaneous rectification of the drainage, or she will go on to a dangerous sapræmia of severe character, or even to fatal sepsis.

In just such cases as this many of the standard authorities advise immediate invasion of the womb with douche, curette, and gauze pack, and many practitioners follow out religiously this advice. The treatment is generally successful; the uterus is drained, and the alarming symptoms subside. However, no authority fails to admonish as to the sometimes harmful, even dangerous nature of the proceeding, and many condemn it as hazardous and unwarranted. Certainly, if relief can be procured, or the condition can be prevented by simpler and safer means, this should be tried before resorting to these more heroic measures.

Repeatedly during the past twelve years the writer has relieved these patients promptly by reposition of the uterus. The results have been so uniformly good, the plan adopted so safe and simple, that he feels that it may be commended to the profession.

Early impaction may result in severe after pains, neuralgiclike pains in the lower limbs, insomnia, and tender abdomen. Lifting the uterus, and the application of compresses to support it will relieve these symptoms. The most frequent time for impaction to manifest itself is from the third to the seventh day. In every case that shows suppression of lochia, or the slightest rise of temperature, accompanied with the other symptoms detailed, an examination is made. No douche is given, but the vulva is cleansed and the examining hand rendered aseptic. Two fingers are introduced into the vagina. The uterus is usually found pressed down in front behind the pubic arch, and is swollen, tender, and œdematous. The cervix is sharply angulated, and turned up against the uterine body. Gentle and continuous pressure on the anterior wall of the uterus will dislodge it upward, with immediate relief to the patient. The woman is then placed in the knee chest position, air is admitted to the vagina, and the uterus drops out of the pelvis. With a finger on either side of the cervix the uterus is supported while the woman is eased into the right Sims's position. Usually, as soon as she is placed upon the side, there is a copious flow of retained lochia. She is permitted to remain in this position for several hours, or until the uterus is well drained. Oftentimes upon resuming the dorsal position, the uterus will again descend into the pelvis, with recurrence of the symptoms, and a second, or even a third reposition may be necessary. Binders and compresses often fail to prevent descent, but by careful watching the uterus can be kept draining until the involution is sufficiently advanced to prevent further impaction. Reposition once or twice a day for two or three days is usually sufficient.

Dr. C. C. Griffith, my associate in practice, who has been observing carefully these cases of impaction, and who has met with gratifying results in the treatment of them by simple reposition, has for some time been having his puerperal women assume the knee chest position daily after the first twenty-four hours. The procedure seems rational, and the results have been uniformly good in the prevention of these impactions.

The main object aimed at in the publication of this article is to emphasize the fact that these conditions are of very common occurrence in the puerperal state, and are frequently brought about by trivial causes; that a moderate degree of impaction is responsible for many of the minor discomforts of the puerperal woman, such as prolonged and distressing after pains, insomnia, headache, nervousness, neuralgias originating from pelvic pressure, etc.; and that the more severe or prolonged impactions are productive of the graver sapræmic intoxications. To further emphasize the importance of recognizing that most of the fevers of childbed are not real infections, demanding treatment as such, but that they are sapræmic in nature, the result of imperfect drainage. That imperfect drainage is most frequently due to dislocation and impaction of the uterus, and that these conditions can be readily prevented or corrected by the safe and simple means suggested in this paper.

MAGIC AND MEDICINE: A STUDY IN THE BORDERLAND OF SCIENTIFIC LIGHT AND DARKNESS.

By John Knott, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I., M. R. I. A.; etc.,
Dublin, Ireland.

(*Continued from page 1237.*)

It need hardly be said that the more familiar forms of disease, and the occurrence of other modifications of the ordinary routine course of natural phenomena, were not so likely to be attributed to witchcraft—or correlated demoniacal influence—as were the more rare and startling. Among those which were specially calculated to arouse suspicion were: a *sudden attack* of acute illness, of comparatively *unfamiliar type,* prostrating a person who had previously been *in good health;* the development of *convulsive* affections, such as *epilepsy* and its congeners; *atrophic* lesions — *infantile atrophy* was a specially characteristic effect of a glance of the "evil eye"; *paralytic* attacks *not ushered in by* the regulation *apoplectic introduction;* and the various forms of *nonfebrile disease accompanied by delirium,* with spectral hallucinations or illusions. The *ligature* was a specially demonstrative manifestation of witchcraft influence; it meant the instantaneous inhibition of some (usually very important) natural function. *Impotence* was one of its most notable results. It was frequently utilized as a weapon of revenge by a disappointed female candidate for matrimony, or by some of her friends or clients; also by special enemies of the bridegroom who had carried off the prize of beauty (or rank or wealth) which had been earnestly pursued by another; and was most particularly and "devotedly" applied, perhaps, in those cases which had become involved in the cruel process of jilting. The securely orthodox method of application was to attend the ceremony of the matrimonial sacrament, and to repeat three special clauses directly after the officiating priest; tying a knot with the pronunciation of each, on a string or ribbon imported for the purpose. The "ligature" was not, however, confined in the range of its powers to the human body, or even to animated nature; a fleet of the largest merchant vessels, or of the most formidable men of war, might be fast bound in port thereby—in presence of winds apparently most favorable, and in spite of the most strenuous exertions on the part of the mariners; the churning of milk might fail to collect its butter; &c.; &c.

The *melancholic, hypochondriac,* and *hysterical* were, as might be expected from the frequently inexplicable onset and nature of their symptoms, and the peculiar subjectivity of the same in every individual case, often looked upon as being subjects of special witchcraft influence. Indeed, there are few practitioners who have spent a certain number of years in the profession of medicine who have not met with some cases which might fairly well explain the origin of such suspicion, even if the symptoms could not be held to justify the treatment by combustion which was so frequently and so readily resorted to in the pre-scientific generations. The convincing impression, which such groups of symptoms as were frequently manifested in cases of suspected witchcraft so forcibly produced, is but too well demonstrated by the record of the witchcraft faith and dependent practice of one of the most earnest students and enlightened thinkers among the medical men of the seventeenth century. Every well-informed reader of this communication will, I think, admit that Sir Thomas Browne was possessed of nearly every natural gift and acquired attainment that was available by the most earnest and industrious medical truth seeker of his day. Yet he maintained throughout the varied experience and labyrinthine research of a life enthusiastically devoted to the pursuit of truth and the relief of physical suffering, the unflinching rigidity of his formulated views regarding witchcraft and evil spirits which are so effectively expressed in the quotation to be found near the beginning of the present communication.

When the descendants of the exiles of Eden became sufficiently numerous to suffer from the competition of their contemporaries in the appropriation of the roots and the acorns, the bananas and the grapes, which had been spontaneously supplied by the beneficent hand of Nature, they were obliged to emerge from their cave and forest homes, and concentrate the greater part of their economic attentions on the practice of the original professions of Cain and Abel. Hunting and fishing were intermediary and occasional pursuits and amusements; partly created by the attractive excitements of the chase and the trap and the angle, and partly by the desire for the acquisition of nutritive titbits. With the gradual growth of dawning intelligence, a goodly proportion of the time which was not occupied in the provision for animal existence, and in the gratification of the passions, must have been devoted by prehistoric man to contemplation of the phenomena above, beneath, around—and within—him. One of the characteristic lucubrations of the author of the *Religio Medici* is that *of the Erectnesse of Man.* He therein refers to the opinion of Galen: "who in his third, *De usu partium,* determines that man is erect because he was made with hands, and was therewith to exercise all Arts which in any other figure he could not have performed, as he excellently declareth in that place where he also proves that man could have beene made neither Quadruped, or Centaur." The Galenic hypothesis was formulated in opposition to the well known venerable one—perhaps even more flattering to man's innate vanity—which had been made familiar to all readers by the often quoted lines of the Latin poet:

Pronaque cum spectent animalia cætera terram
Os homini sublime dedit, cœlumque tueri
Jussit, et erectos ad sidera vultus.

And the continuation of Browne's comment presents a further special focus of interesting enlightenment, indicating as it does the genetic source of blundering opinion which is so prone to germinate spontaneously—and develop rapidly, and grow stoutly, and blossom broadly and brightly—in the ill ploughed and viciously seeded mental fields of a large proportion of the "modern" superficial commentators who are unqualified to see through, or draw aside, the veil of metaphoric expression in which the members of the intellectual oligarchy of every age and nation have been always so prone to infold their sublimest thoughts:

"The ground and expression of this conceit was a literall apprehension of a figurative expression in Plato, as Galen plainely delivers; the effect of whose words is this: To opinion that man is to looke up and behold the heavens, is a conceit only fit for those that never saw the fish uranoscopus, that is, the beholder of heaven; which hath its eyes so placed, that it lookes directly to heaven, which man doth not, except he recline, or bend his head backward; and thus to looke up to heaven agreeth not onely unto men, but Asses; to omit birds with long necks, which looke not only upwards, but round about at pleasure; and therefore men of this opinion understood not Plato when he said that *sursum aspicere,* for thereby was not meant to gape or looke upward with the eye, but to have his thoughts sublime, and not only to behold, but speculate their nature with the eye of the understanding."

When primitive man commenced to "speculate" the nature of his environments, the intellectual data furnished by his "innate ideas" must indeed have been limited in quantity and crude in quality. But Plato's observation was sublimely true in the sense which he meant it to convey—to his esoteric readers, at least—he was distinguished from all other created beings by the fact that he concerned himself with "things above." An dwith this hankering for indulgence in intellectual aviation developed that restless spirit of inquiry into the mysteries of the unknown, which many painstaking votaries of truth profess to think remains still as far from its goal as was the point from which it originally started. The contemplation of the inherited and continuous, if not quite satisfactorily progressive—efforts, and the results successively attained, cannot fail, however, to interest every inquiring and enlightened mind.

Even at a very early period of (unrecorded) human history, our ancestors probably felt fairly satisfied regarding the definiteness of the sure and firm set *earth* on which they trod, and which experience had taught them to utilize to best profit in the pursuits of agriculture. *Water,* although, in appearance and general physical properties, so transparent and passively yielding, was, in some other respects, a good deal more mysterious. Although so specially nonresistant to general manipulation, it was able to oppose and overcome fire, the most universally destructive of all known agents; and to extinguish life in all animals not specially adapted to an existence within it. Then, on the other hand, its presence, in appreciable quantity, was absolutely necessary to every form of life, both animal and vegetable. And it existed not only on the face of the earth, but in the (firmament or) heavens above, and beneath the earth (and the foundations thereof) everywhere. Accordingly, the fact came to be regarded and accepted as unquestionable, that the earth (which was undeniably flat—with qualifying irregularities, in the form of excrescences representing mountains, valleys, and the adjuncts thereunto adherent, and the decorations thereof) was completely surrounded by, and rested upon, a vast bedlike expanse of the aqueous fluid, the presence of which could always be demonstrated by digging to a sufficient depth. Thus earth and water were so arranged as to form the basis of support of all the movable and floating objects that occupied a place on the surface of man's terrestrial habitat. The aim of the philosopher always has been the tracing of the "facts" and "things" and "phenomena," which he has found on the segment of the circumference of nature that has been providentially placed within his reach, to the central source of their causation and government. Thus philosophical cosmogony and cosmology have evermore concerned themselves with: the efficient primordial cause of *matter;* its intimate structure; and its final cause, or destiny. And, as every centre is represented by a single point, the philosophical goal—which many seem still to think in possession of its fortress of primitive seclusion—always connoted *unity:* of creative energy, of motive mechanism, of germinal growth. Some of us think it funny, to a certain limited degree, to contemplate the fact that, in the middle of the mechanical nineteenth century, they rebaptized the radius of the sphere of Nature's phenomena and facts of observation, with the very "modern" name of *evolution;* and then blessed themselves (pharisaically) that they were so much better (philosophically) than any of the members of the various battalions of research which had preceded them during the course of the long, long series of centuries of relative unenlightenment.

As *homo sapiens* waxed in wisdom—or, at least, in curiosity—he found himself far more puzzled by the intangible things above, and (partly) around, than he had ever been by the solid and fluid constituents of the surface of the terraqueous globe which he occupied. He came gradually to recognize that three things were too wonderful for him; yea, that there was even a fourth which he knew not; as every inquiring mind has been made to feel in its turn. Overarching the whole domain of visible Nature was the inscrutable and impenetrable "sky" or "heaven"—which in process of time became incarnate, among presiding supernatural powers, as *Jupiter Diespiter.* The things above seemed to influence—that is, govern—things below; and the notion was strongly corroborated by the repeated occurrences of uncanny, and inexplicable, and destructive, meteorological phenomena; as well as by the permanently obvious influences of the "heavenly bodies" on growth and reproduction, with the coincident government of *times,* and *seasons,* and *days,* and *nights,* and *months,* and *years.* The more thoughtful spectators of the more pronounced climatic phenomena of the subtropical nursery of the human race, with its atmosphere of inspiring clearness, its sharper contrasts of light and darkness, and its wondrous annual object lessons in the influence of the heavenly bodies on growth and reproduction — animal and vegetable — on the earth's surface, were by degrees led to inquire; and, as undoubtedly, after many generations of more passive indulgence in wonder and worship. And the two great classes into which the various communities of the human race have always been prone to divide themselves were surely outlined at an early date in the progress of the "evolution" of the human species. The *spiritualist* was always disposed to look upwards; to endeavor to explain the inexplicable; to familiarize himself with the inscrutable; and to grasp the unattainable. The materialist was ever prone to look downwards, and cultivate, with all the skill and vigor at his command, the use of the "muck-rake" which was the most characteristic and most efficient weapon to be wielded in the pursuit of his ambition. The three things above, which eluded the direct tests of the senses of the inquisitive, were: the *sky* (*æther*), *sun*—with the other members of the heavenly host (*ignis*), and air (*aer*), of which the presence was so mysteriously necessary to the support and maintenance of the phenomena of organic life. Below were found the crude elements of *earth* and *water,* which alone lent themselves directly to the methods of experimental curiosity and investigation. Speculation, at least, could suggest plausible explanations of the manifold obvious influences of the igneous and aery meteors; the mysterious sky itself was the one entity which was absolutely inscrutable. No wonder that it came to be regarded in the primitive mind as the infinite "parent of gods and men."

Crossing, day after day, the bosom of this almighty *Father* of day and light, the *Son* (Sun) passed in his diurnal pilgrimage from east to west, to rest each night after the labors of the foregoing day. His presence was productive of, and absolutely essential to, light and heat, vegetable growth and reproduction, and animal comfort. With the annual ascent of the intensity of his rays came the *resurrection* of vegetable life, to be regularly succeeded by an autumnal decay during their recessional decline. He came, accordingly, to be recognized by primitive man as the friend and Savior of, not only the whole human race, but of animal and vegetable life all over the world.

In closer—circumambient—proximity, but mysteriously defiant to the powers of vision (and, in a more restricted sense, to those of the other organs of physical and intellectual perception), was the something which must pass into the nostrils of man before the functions and phenomena of life are fully established, and without the continuous presence of which they can never be maintained. Was this essential factor in the regulating support of vitality actually identical with the invisible *Air* of which the motions produced storms of every variety, or did it merely reside within that subtle element? The definite answer to this question was, indeed, slow to come; but some strangely prophetic guesses were made in the course of the long interval. The life giving spirit was certainly in the air, if it did not wholly compose it.

Of these three powers—over- (arching) ruling, preserving, and life giving—a Divine *Trinity* was formed in every one of the more comprehensive and complete of the early religious systems. And, as a necessary—though remote—result, the parabolic symbolism and metaphoric nomenclature, which had become generally distributed in connection with the discussion of supernatural mysteries, were, in part at least, adopted by the early founders of Christianity; and have, in consequence, been transmitted down through the series of successive ages so as to appear even in the popular literature of our own matter of fact twentieth century.

Thus, in a general way, it was settled that the *four elements* indicated—*earth, water, air,* and *fire*—formed the essential constituents of the structure of the whole known world; more than probably, indeed, of the whole universe. They formed concentric shells around the centre of our terrestrial globe (*terra, aqua, aer, ignis*—in gravitational order) during the prevalence of the Pythagorean system, when the rotundity of this planet was definitely recognized. In addition to these four elements, Pythagoras postulated the existence of a fifth something (*ἡ πέμπτη οὐσία*) more inexpressibly subtle by far than even the substance of the stellar *ignis;* a *quintessentia* of which the undefinable presence penetrated and permeated all matter and all space, and was absolutely essential to every functional activity. This fifth type of material existence played a rôle of foremost importance in the production and development of every physical and vital phenomenon.

As might well be expected from the variety of human attainments, mental abilities, and prospective standpoints—to say nothing of human perversity of opinion and love of contradictory assertion (with or without an added consciousness of its diluted or neutralized veracity)—the quaternary catalogue of primordial elements was criticised, with varied degrees of disfavor, by many leaders of physical science and philosophic thought. I have already referred to the fact that the great object of philosophy, and of the researches of its votaries, was that of tracing the primordial causes of all the phenomena of the cosmos to the centre—the Unity from which all radiated or emanated, and which exercised its (telegraphic and telepathic) influence upon every point of the circumference of every one of the concentric spheres which surrounded it. In accordance with this aim, and the guiding views which inspired it, we find the first of Greece's celebrated series of "wise men," Thales (624-548 B. C.), deriving his cosmos from the single element of water—from which all forms of matter, even all living beings, were originally derived. (Before criticising this notion too severely the reader should remember that the germs of the philosophy of Hellas were in great measure derived from Egypt, the gift of the Nile, the existence of whose inhabitants and vegetation depended wholly and solely on the annual tidal overflow of that stream; and that innumerable specimens of insect, and reptilian, and ophidian life were always observed to emerge from the layer of deposited mud—after exposure by the ebb of the same—with a rapidity of production which gave a plausible excuse for the conception of *spontaneous generation.*

A contemporary of Thales was Anaximander (611-547, B. C.) and his primordial element, which formed the generative unit in his scheme of cosmic evolution, was sought for and located in a higher stratum—an outlying sphere of the cosmos. Thales may have been (more prudentially) prone to look downward, and study stellar phenomena largely by the aid of their reflection in water; Anaximander "speculated" above and around, and supplied the source of all existing species from a homogeneous form of matter which had lain uniformly distributed throughout the whole domain of space—very suggestive of the modern conception of *ether* (!).

In the next generation appeared Anaximenes (588-524 B. C.), who also sought for a single primordial element as the central item of his philosophic creed. And he believed that he found it in *air,* the element of which the inspiration constitutes the first essential phenomenon of separate (newly-born) animal existence, and is found to be continuously requisite all through life afterward.

Toward the end of that century came Heraclitus who preached the gospel of the *perpetual flux* of matter in all its forms—another item of approximation to our recent revelations of the doctrines and phenomena of "solid solutions," "liquid crystals," and other monstrosities of recent physical science. The mobile factor in the system of this evolutionist was the single one of *fire*—the conception of which unique primordial element would appear, as in the case of that patronized by Anaximander, to differ but slightly from the modern one of the cosmic ether.

It was the famous philosophical physicist, Empedocles (495-435, B. C.), who first welded together the various views advanced by the several advocates of the universal claims of the several primordial elements; and the quatenary system which he produced by this amalgamation actually dominated physical thought down to the time of the epoch making chemical revelations of Lavoisier. Of the four elements so recognized and accepted, as the ultimate constituents of all the forms of matter which were displayed in the existing cosmos, two were light (and, accordingly, centrifugal), and two heavy (centripetal). In reality nothing dies and nothing is born. The origin (*creation*, or *birth*) of anything is the union of the particles of the elements in due proportion; and its disappearance (death or decomposition) is the separation of the same. The occurrence and progress of those processes and phenomena are determined and regulated by two forces: *love* and *hatred*, which is, of course, a poetic mode of connotation—applied to the powers that moderns refer to as *attraction* and *repulsion* (closely allied to the *sympathy* and *antipathy* of mediæval mystics).

An interesting view of the elementary constitution of matter was that of Anaxagoras (about 500, B. C.), who maintained that every body contains elements which belong to each of all the species—so that every existing specimen of matter is a microcosmos, an *omnia in omnibus*. From the possibility of modifying the proportional quantities of the element present results the possibility of the transformation—"*transmutation*"—of the various bodies or forms of matter.

But a seven league stride in the direction of a purely mechanical constitution and government of matter was made by the celebrated "laughing philosopher," Democritus of Abdera, who forcibly suppressed every essential distinction between the primordial elements; and loudly proclaimed the essential homogeneity of matter, as well as its atomic constitution. The properties of substances, and the phenomena of the life and death of organized and animated bodies, are the respective results of the figure, grouping, and disposition, of the atoms; while all the phenomena of action and passion are derived from the contact of the same.

A more subtle and poetical view of the mechanical constitution and phenomena of matter was advocated by the "divine" Plato (427-347, B. C.), who regarded *movement* as the immediate, and sole cause of the endless transformations of matter. Movement was always produced by the soul of the cosmos, and remained always extrinsic to the elementary bodies. But he recurred to the quaternary system of elements advocated by Empedocles, and accorded to final causes so great a degree of importance, that, even in the lowest types of existing substance and being, the skill of the master hand of order and beauty will be found to reveal itself to the trained eye of the philosophic observer.

The atomic theory of Democritus was enthusiastically adopted and defended by Epicurus—with the very significant and far reaching modification that the primordial atom was endowed with *automobility*.

A specially interesting and important modification of the theory of the elementary structure of matter which had been advocated by Empedocles is that which was held by the Stoic sect of philosophers, which took its origin from Zeno (347-275, B. C.). After pointing out that there were two first principles, the *active* and *passive*, they proceeded to indicate that the former was the *Λόγος*, which was *Deity;* and had eternally pervaded the latter (or passive) principle of *Matter*, and had created all things. The active principle was the primordial and sole cause; the passive constituted the material on which it operated. The conception of each was as body—both mutually interpenetrating. Such, apparently crude, conception becomes subtilized when we find that Zeno had accepted and promulgated the quaternary system of Empedocles; and that his all pervading active principle was *Spirit*—a term of which the original connotation had been *air in motion*, but which was refined by the conceptions of the Porch into an entity of quintessential subtlety, that made it the prototype of our modern *ether*. By the agency of this active principle the four elements had been originally produced, and into it they were destined to be ultimately reabsorbed. As could easily be anticipated, the subtlest of the four elements (*fire*) was most intimately associated with it. Such considerations led Zeno to distinguish two kinds of *fire: destructive* and *artistic* (or *constructive*) The latter, which soon came to be familiarly known as *ether*, was that out of which the other elements all arose, and into which they were to be again resolved; while, in the existing universe, it formed *the substance of the heavenly bodies;* the *soul* of animals; and the *nature* of plants. The elements were derivable therefrom by a graduated process of condensation; and dissolution occurred in the reverse order, by corresponding steps of rarefaction. Then the varied forms of matter which were derived from these *four elements* were found to present *four qualities:* hot, cold, moist, and dry—each derived from a corresponding element: *fire* made *hot; air* furnished *cold; water* responded to *moist;* and *earth* to *dry*. How freely these terms, and the conceptions which they connoted, leavened the literature of physical science, even down to the closing years of the eighteenth century, is well known to every inquirer who has searched the scriptural records of scientific opinion.

All students of the history of human thought—philosophical or theological—know something of the mystical symbolism attributed to *numbers* in the teaching of Pythagoras; which was, of course, but a Hellenized version of the mixture of Brahminic, Zoroastrian, Chaldean, and Egyptian doctrines which that enthusiastic votary of truth and wisdom had collected during the long years of his peregrinations in pursuit of the same, and his anabolic efforts to build up the materials which he had accumulated into a symmetrical body of illuminating wisdom. Surely there was nothing conceivable by human intellect which could be made to appear more purely simple, or more unquestionably immortal, than the nature or essence of number. Nothing was more abstract or more immaterial. The research of the philosopher of old, as I have already indicated, had always been directed to the discovery of the central cause of all natural phenomena; and the central—and, accordingly, single—constituent which was the passive agent that transmitted the various manifestations of its power, and was so modified thereby in all directions of the radii of the cosmic sphere, and after methods of permutation and combination so infinitely varied, as to call forth the "appearances" and "facts" of which the governing "laws" had evermore formed the riddle whose the solution was sought by the scientific inquirer. The importance of *"unity"* could not fail to become progressively magnified to the mental vision of every thoughtful observer: in the heavens above, on the earth beneath, and in the waters under the earth; in the megacosm as in the microcosm; in the political community, as well as in each of the individual specimens of humanity of whom the same was collectively composed. There can be no doubt that such considerations impressed the mystic significance of numbers on the minds of the great founders and cultivators of Greek philosophy. And, accordingly, we find that in the system of the "most poetic of philosophers" we meet the *Unit* and *Duality* representing the two ultimate constituents of the cosmos. Thus all the concepts of science came to presuppose the existence of two primary (and, accordingly, indefinable) somethings, or notions, or *"ideas": unity,* and *plurality.* And every definable concept could be represented as the product of a special mode of combination of these two component factors. At the same time, the esoteric inquirer had to bear in mind the instructions of his master in distinguishing this transcendental *idea* of *unity* from the ordinary citizen's notion of the numerical integer of commercial and allied reckonings. As every object presented to thought, and every class submitted to definition, represented, each, a combination of the *one* and the *many,* the growing tendency to omnipotence of number in the world of thought can be readily fancied. These central *"ideas"* were not the respective representations of the arithmetical integer *unit* and *series of whole numbers,* respectively; they were the primary logical concepts of *a single "term"* and a *group* or *class of terms.* After the assumption of the point of view thus presented, the mystery which has so very usually been attributed to *number* and idea in the Pythagorean and Platonic philosophy, respectively, will, I venture to suggest, appear fairly facile of comprehension to even the average mind of the intelligent and educated. The lofty range of Plato's conception of the *idea,* and its properties and functions, is perhaps as conclusively shown by his reference to the *deity* as the *"idea of ideas"* as could well be implied by written or spoken language.

The Pythagorean philosophy—with its Platonic, Neo-Platonic, Philonic (and very many other less important) modifications and adaptations (and incrustations and excrescences)—percolated the successive strata of all the generations of western life, and the intellect and the philosophy thereof, down to that of the mediæval schoolmen, of the *illuminati* of the Renaissance and the Reformation, of the cosmic hypotheses of Laplace, of the chemical ones of Lavoisier, of the luminous ones of Fresnel, of the thermic ones of Mayer, and of the (restored) ethereal—and *quintessentially* unified—one of M. Gustave le Bon. Thus has the golden thread of the continuous weaving of the most subtle and highly-trained specimens of the human intellect preserved an unbroken successive series of bonds of linkage—still discoverable and identifiable—down through a period of at least twenty-five centuries; in the tangled skeins, and often cruelly lacerated web, of human research and introspection! And so the inquirer who has traced the continuity of the same, as can well be done by every one who has eyes to see and mind to perceive, recognizes therein another indisputable item of evidence of the kinship of human nature; of the essential similarity of the points of view from which the owners of the most cultured and inspired—as well as inspiring—types of intellect appear to have always regarded both the great *cosmos* itself, in all its departmental sections, and its *microcosmic* miniature edition, theomorphic man.

As a matter of fact—and the point has been emphatically indicated by one of the most accomplished Platonic experts of the present generation—the real objects of mathematical study are "a system of pure logical concepts, which can be thought with exact precision, but cannot be adequately represented to sense or imagination. In Plato's theory of ideas we have a conception of science which rests upon the view that mathematics is the one and only true science, a consistent working out of the thought expressed by Kant in his saying that "every study contains only so much of science as it contains of pure mathematics." Pure mathematics was, so far as we can now ascertain, the only department of *science,* as the term is popularly applied in the present day, in which well defined and definitely demonstrable results had been obtained, in the days of the founder of the Academy—whose devotion to geometry, and faith in the value of a training in its methods as the soundest basis for a subsequent introduction to the loftier pursuits of philosophy, was so unbounded, that the celebrated warning inscription which was engraved above its portal forbade the intrusion of any would-be disciple who had not previously mastered its methods and principles.

The nomenclature—the terminology—of the Pythagorean philosophy of abstract numbers has left very visible traces in the literature of Christian theology. The learned and accomplished Synesius—soldier, diplomatist, orator, philosopher, and poet—was consecrated a bishop in the year 410, A. D. In the verses of some of his very inspiring hymns are to be found references to the Deity as the *unit of immortal numbers* and *of immaterial kings,* and to the Son of God as the *unit of units* and *number of numbers.* This last epithet is one which is attributed by Hierocles to Pythagoras—who used it in an effusion in praise of the Deity. We find that, according to the account given by his (sometimes, perhaps, rather hypercritical) pupil Aristotle, Plato's celebrated *Theory of Ideas* was presented by him in his more advanced years in a quasi-mathematical form, the *ideas* being actually spoken of as *numbers.* Each individual "idea" was ultimately composed of two factors, unity ("the *one*" = "the good") and duality ("indeterminate duality" = "great and little"); which thus came to be the ultimate constituents of the universe, and of the whole contents thereof. Having regard to this fundamental assumption of his terminology, we can readily see that every object of definition is really a combination of Unity and Duality—of "the one" and "the many"—and comprehend how natural it was that Plato should have called his *ideas* by the apparently ill sorted epithet of *numbers;* that the soul of the universe and the souls of human beings are formed of a combination of the two elements of *"same"* and *"other";* and that "all things that are" are arranged in four categories: "the indeterminate"; "the limit"; "the mixture of the two"; and "the cause of the mixture." When Plato states that sensible things are *copies* of the *ideas* which are the true objects of science, he means that they always display what is spoken of in modern phraseology as "conformity to law." But for the "divine" philosopher it must be remembered that such conformity is never complete in the sensible world; for there is found in every actual sensible experience a marginal element which defies precise measurement and calculation; while absolute "conformity to law is to be found only in the ideal constructions of a pure conceptual science."

The pride of place which had been occupied by the *idea* in the system of the early Platonists, would seem to have been in turn usurped in the school of the Alexandrian Neo-Platonists by the λογος; that figures so prominently in the philosophy of Philo, and has continuously afforded so much turbid inspiration to the very numerous amateurish commentators on the opening verses of the fourth Gospel. The λογος existed from the beginning, with God; and by that agent all things were made. The *unity* of the great first cause of the natural phenomena which present themselves to our senses in their endless varieties of *plurality* was—very necessarily—permanently present to the mind of every disciple of Plato, and to that of every student and critic—favorable or unfavorable—of his wondrously subtle system. For, in the system of the "divine" master, the *cosmos* itself was a single *animal,* consisting of a *soul* and a *body;* and this great unit embraced within itself all the numberless forms of animal life, in a manner strictly comparable to that in which the model, according to which it was originally constructed, the *idea* (of an animal, or "intelligible animal"), comprehended in its logical extension all the varied *types* of animal *species.* The ψυχὴ κόσμου was constructed by the *Demiurgos* of Plato—to whom the *Logos* of the Neo-Platonists corresponds in this department of functional activity—of three elements: *sameness, otherness,* and an entity produced by a special preparatory combination of the first two. So that the idea of trinity in unity constituted the fundamental substratum of Plato's cosmology and cosmogony. And so his Alexandrian disciples and critics came in this connection to give a very distinctive color to the early philosophic contributions to, and comments on, the general literature of dawning Christianity. One of the most justly celebrated of the Platonic dialogues gives a sketch of the psychological development of "Athene's wisest son." Socrates is therein made to say that, after the restless and prolonged research of his early curiosity, he had still remained wholly dissatisfied with the various theories of cosmogony which he found furnished by the (physical) philosophers and (creative) poets, till he learned the view which had been formulated by Anaxagoras: Mind (νοῦς) is the cause of the structure and order displayed throughout the World (Universe, κόσμος). The enthusiasm thus awakened was, however, doomed to wane on the discovery of the fact that the inventor of that plausible theory accounted for existing phenomena by suggestions of mechanical activity—the Mind being appealed to, as the final and universal cause, only in those instances in which a mechanical explanation of an existing fact was not found to be available. So we may safely conclude that the λόγος cosmogony was not new when floated so effectively on the Alexandrian intellect by Philo and his disciples. And, as Professor Taylor points out, in the highly elaborated, half mythical cosmogony of the *Timæus:* "The true reason or cause of the existence of the universe is the goodness of God, who, being good Himself, desired that His work should be as good as possible; the accessory conditions are provided for by the character of the disorderly material out of which the universe is moulded by God."

In a cosmic monarchy, of dimensions so far beyond the range of human powers and means of measurement, it was very necessary that a system of telepathy or telegraphy—or both—should be arranged for the conveyance of the will of the omnipotent ruler. The lights which beautified the firmament might conceivably fulfil such functions. Their luminous rays reached the earth's surface by some mysterious agency, and their periodical revolutions regulated the principal phenomena thereon. Thus came *angels*—whose earliest symbolic representatives were undoubtedly the members of the "heavenly host."

Next appeared *æons.* The conception of a supersubtle (spiritual) emanation from the *eternal* and *unchangeable* alike underlies every one of these terms. If the former were first specially distinguished as the messengers and governing indicators of cosmic space, the latter were correspondingly entrusted with the regulation of cosmic time; and the fact that each of these fundamental concepts came to be made measureable, and was definitely registered in terms of the other, went far to show the unity of the central and regulating original cause, and permanent Archon of the mysterious whole—the great ineffable object of the researches of every physicist, and the speculations of every philosopher. And the overwhelming importance of this central unit, and the progressive transmission (and modification as well as dilution) of power and function as we pass radially therefrom, became continuously more evident by contemplation of the properties and associations attributed to *numbers.*

The number ONE, the *monad* or *unity,* was made by Pythagoras and his followers a symbol of Divinity, and also of a good and pure intellect. It was figured in the celestial world by the *sun,* in the intellectual world by the *anima mundi,* and in the human microcosm by the *heart*. The divine Plato made his Demiurgos, or maker of the cosmos, to fashion the universe which offers itself to the scrutiny of our senses on the model of that furnished by the eternal *idea*. This sensible universe is so far from being eternal in duration, and fixed in the composition and arrangement of its chief constituents, that it is a something which perpetually *becomes*—it is subject to, and, as a matter of fact, is incessantly undergoing a process of structural change. From the *unity* of the model, the author of the cosmogony of the *Timæus* deduces the unity of our universe—which was copied therefrom—and accordingly rejects as untenable the notion of a plurality of worlds. The omnipotent qualities and capabilities of sacred unity held a sway so dominating in the Platonic intellect, that the founder of the Academy was not satisfied with merely asserting the oneness of the *Cosmos:* he announced that its composition was that of a vital organism—an individual animal, endowed with a soul and a body; and embracing within its circumference all lesser forms of animal life—as the model *idea* (of animal) comprehends in its logical extension all the various "types" of "animated nature."

Two (*duality*), on the other hand, represented the principle of *evil* and the corresponding type of human intellect. It was the number of disunion and strife. But it must be added that it also came to be recognized as the number of mutual love and of marriage, of memory, of science, and of——MAN himself! The shifting combination of aspects thus indicated is probably due to the fact that *man* was in one sense the soul, in another merely the body, while in a third the connotation included that of both. And as with the *microcosm* so with the (*megacosm* or) *cosmos*. The latter term sometimes meant Deity, at other times the material universe as displayed to the senses (with the blanks filled in by imagination); and, on still other occasions, it connoted a combination of both. And, as the Cosmos was treated by the Stoics with even increased precision, it is instructive—even in the twentieth century light of all our inherited philosophic wisdom—to learn from the text of Diogenes Laertius that the Divine Cosmos (identified with the omnipotent and omnipresent Deity) was regarded as: "an individual made up of all being, who is incorruptible and ungenerated, the fashioner of the ordered frame of the universe, who at certain periods of time absorbs all being into himself, and again generates it from himself." (Professor St. George Stock's version.)

The symbolism of the number THREE presented vastly greater and wider complications. This would appear to have been recognized as a specially sacred number, even from the very earliest period of organized thought. It was the number of *perfection;* it represented the composition of the primitive *Trinity*. All known things may be said to exist in threes: beginning, middle, and end; past, present, and future. Not only is all *time* thus contained in three, but so too is all space: in length, breadth, and thickness—circumscribed by the limits of line, surface, and body. The Almighty Creator, as the prophet himself pointed out, orders the world by three: number, weight, and measure. The *human microcosm* consisted of a trinity: body, soul, and spirit. The *soul* itself was triple: vegetative, added at the moment of conception; sensitive, at the time of quickening; and intellectual, at the instant of first breathing. Accordingly, we are not surprised to learn, at a later period, of three grades in the angelic hierarchy; of three theological gifts: faith, hope, and charity; of three degrees of beatitude: innocents, martyrs, and confessors; of three intellectual powers: mind, memory, and will; &c. And as the animated *megacosm* or great world animal was dominated—as well as originally constructed—after the model furnished by a unified *idea*, we find that the *soul* of the same, as conceived by Plato, was formed from three elements: sameness, otherness, and a specially prepared entity which was prepared as a product of the union of these. And as has been indicated by one of the highest living authorities on Platonic questions (Professor A. E. Taylor) this structure would seem to represent, in mythical garb, the three grades of cognition dealt with in the *Republic* of the same philosopher: *apprehension* of the immutable Ideas; *opinions* about the incalculably varying world of existing facts; and *apprehension* of the intermediate class of mathematical objects.

The importance of the number FOUR in the cosmic scheme is well illustrated by the arrangement of the four traditional *elements*—as devised by Empedocles, to whose cosmology I have already alluded. The "divine" philosopher declined to accept this series of elements as such, in the modern sense of the term; as ultimate and refractory to all further attempts at analysis. He endeavored to account for the differences of properties observable in the elements by specific differences in their geometrical outlines. The ultimate constituent particles of the several elements were made to correspond, respectively, to four regular geometrical solids: the tetrahedron, octahedron, icosahedron, and cube. The sides of each of the first three of this series can all be constructed by bringing into juxtaposition right-angled triangles in which the length of the hypotenuse is double that of the shorter side: four isosceles rectangular triangles are used in forming the square face of the cube. As *earth* is formed of *cubic* molecules, this geometrical peculiarity was supposed by the founder of the Academy to account for the fact that *fire, air,* and *water* were incapable of being converted into that element, while they were—all three—mutually reducible, each into any of the others.

The squaring of three gave the solid nine, which numbers the angelic choirs around the throne of the Eternal: seraphim, cherubim, thrones, dominations, powers, virtues, principalities, archangels, and angels; the corresponding series of the orders of condemned spirits: false spirits, lying spirits, vessels of iniquity, avengers of wickedness, jugglers, powers of the air, furies sowing mischief, sifters or triers, and tempters or ensnarers; the number of the *senses*—four *internal: memory, cogitation, imagination,* and *common sense;* and five *external: sight, hearing, smell, taste,* and *touch.*

Even more strangely mystical still in its demonstrable associations was the number SEVEN—which is formed by *unity* acting as a bond of connection *between* two *threes*. Its influence on the human body loomed so largely above the horizon of the mental field of vision of the Pythagoreans that this number was "tropically" denominated by them the *vehiculum vitæ*. It included the constituents of both body and soul: the body being composed of four elements and endowed with four qualities; while the soul—as already noted—was of triple nature, and was endowed with a threefold series of qualities: rational, irascible, and concupiscible. Accordingly, the number seven was the bond of junction between soul and body; and, in virtue of the function which it thus fulfilled, it continuously regulated the existence of man: the generation, conception, development, growth, birth, nutriment, functional activity—indeed the whole of the life history—of every individual. If the semen of the male was retained within the uterus for *seven* hours it surely proceeded to fructification; at the end of the first *seven* days it had become coagulated, and was capable of assuming and maintaining definite shape; at the end of the *seventh* month the still immature fœtus was viable; the capability of survival is determined by the end of the *seventh* hour after birth; at the end of *seven* days the relics of the umbilical cord dropped off; after a period of twice *seven* days the infant begins to turn his eyes toward the light; at the end of the third period of *seven* days it turns the eyes and head freely; at the *seventh* month of extrauterine life dentition proceeds freely; after twice *seven* months it sits firmly; in thrice *seven* months it speaks; in four times *seven* months it walks strongly and begins to run; after *seven* years new teeth are developed and speech is perfected; at the close of the second period of *seven* years comes puberty; at the end of the third *seventh* year manhood is reached, with its fully developed generative powers and characteristic hirsute appendages; by the fourth *seventh* year increase of stature has finally ceased; by the fifth *seventh* year the perfection of strength has been attained; during the sixth period of *seven* years the standard of strength remains the same; at the close of the seventh *seventh* year the maximum degree of discretion attainable by the individual has been reached—the perfect date in the life of man; the ninth period of *seven* years closes with the "grand climacteric"—a period at which death has almost attained to his full powers of conquest (and the end of the tenth seven years' period is the normal limit of the span of human life, according to the inspired authority of the royal prophet of Israel's concentrated wisdom).

Then the limit of human stature—in the vertical direction—was *seven* feet; while the human body was made up of *seven* distinct constituent structures: skin, flesh, arteries, veins, nerves, bone, and marrow. There were *seven* principal divisions of the human body: head, breast, (two) hands, (two) feet, and generative organs. There were *seven* black members of the body: tongue, heart, lungs, liver, spleen, and (two) kidneys. In cases of apparent death, life might be regarded as absolutely extinct if there appeared no sign of breathing for *seven* hours. In all cases of absolute starvation, death occurred at the end of *seven* days. The *seventh* day was critical in all acute diseases; and it was but then that a reliable judgment could be arrived at, and prognosis given, by the physician in charge. The four cardinal points of the horizon, with the zenith, the nadir, and the (central) position of the individual observer, formed a number *seven*. There were *seven* planets, whose concentric crystalline conveying spheres rotated around our globe as their common centre; in order, from the earth outwards, those were: Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn. The revolutions of the same were guided, each respectively by one of the *seven* angels, which were privileged to stand even in the divine presence: Gabriel, Michael, Hariel, Raphael, Camael, Zadkiel, and Zaphiel. Each planet presided over a day of the week in the same order respectively: Monday, Wednesday, Friday, Sunday, Tuesday, Thursday, Saturday. Each had confided to its special charge one of the integral members of the human frame, according to this adopted disposition: Left foot, left hand, organs of generation, heart, right hand, head, right foot; also one of the *seven* openings of the head: left eye, mouth, left nostril, right eye, right nostril, left ear, right ear. To each was also sacred one of the "birds of the air": owl, stork, dove, swan, vulture, eagle, lapwing; one of the beasts of the field: cat, ape, goat, lion, wolf, hart, mole; and one of the fishes of the sea: sea-cat, sea-calf, pike, mullet, dolphin, cuttlefish. The mineral kingdom was correspondingly recognized, in its more specially estimable representatives. The *seven* metals were each under special planetary protection, in the same order: silver, quicksilver, copper, gold, iron, tin, lead. So were the *seven* gems: crystal, agate, emerald, carbuncle, diamond, sapphire, onyx.

The incalculably mysterious influence of the number *seven* was further illustrated by the fact that it governed, not only the general movements of the nearest of the planets but, the evolutionary phases of its luminosity: new to first quarter, first quarter to full, full to second quarter, and second quarter to devolutionary evanescence and return—each period of allotted existence displaying its congruity with the same numerical influence. By the same ineffable power it regulated the periodic times of the ebb and flow of the ocean tides. And, far more mysterious still, its regulating power extended to, and effectively superintended, the periodic phenomena of that most incomprehensible of terrestrial entities: the human female. This strange coincidence of the periodic government of *ocean, moon,* and *woman* was further emphasized—in the judgment of those who believed in the mystical influence of numbers—by the fact that the sum of the added digits, up to seven, happened to amount to twenty-eight ($1+2+3+4+5+6+7=28$). Thus, in presence of so many singular associations, and coincidences, and apparent influences, there is little reason for surprise that the *seventh day* had come to be regarded by outer Gentiles as a natural period of rest and recrudescence—even before the definite revelation of the Divine Will on the subject. And the influence of this number and its special associations, with the chosen people of Jehovah, are amply testified to by the vast number of its repetitions in the Old Testament; and of the special functions with which it is there connected. *(To be concluded.)*

Correspondence.

LETTER FROM LONDON.

An Advertising Pay Hospital.—Unqualified Practice.—Medical Men and Parliament.

LONDON, *December 10, 1910.*

The General Medical Council opened its winter session on November 22nd. Sir Donald Macalister, the president, was in the chair. Sir Isambard Owen, the representative of the new University of Bristol, was introduced. Among the penal cases heard by the council there was one of some interest. A few years ago an institution known as the National Eye, Ear, Nose, and Throat Hospital was established at 123 Oxford Street, and at the May meeting of the council Dr. James Forrest was charged with having associated himself as a member of its committee and also as one of its surgeons with this institution, which advertised by pamphlets and in the public press for paying patients. The complainant was the British Medical Association, and the facts that patients applying to the clinique were charged half a guinea for the first attendance and five shillings for each subsequent attendance and that the institution had been advertised by means of pamphlets and advertisements in the Sunday papers was not denied.

Dr. Forrest stated that the institution was established to meet what was considered a public need, that is to say, for people who could not afford to pay high consulting fees. He and others interested in the institution were influenced to advertise by the fact that certain other hospitals advertised in all the Sunday papers. He also stated that a Mr. Yates, a consulting engineer and founder of the institute, had guaranteed £5,000 and that nearly £2,000 had already been expended. He himself, he said, was working without remuneration. The medical secretary of the British Medical Association, Mr. Smith Whittaker, submitted that the question that the council had to consider was whether medical practitioners should be allowed by surrounding themselves with the apparatus of a committee and of a hospital to advertise indirectly in a way in which they would not be permitted to advertise directly or in their personal capacity.

The council, without desiring to hear further evidence, resolved to direct that Mr. James Forrest's name should be removed from the *Medical Register*. Mr. Forrest's contention that the advertisements of the eye and ear clinique should be condoned because several hospitals advertised in the Sunday papers was of course no answer to the charge made against him, and Mr. Smith Whittaker in opening the case pointed out that, though other institutions advertised, they treated persons who were believed to be fitting recipients of charity and there was at least some inquiry to ascertain whether applicants ought to be treated at reduced fees, so that such institutions were not carried on solely for paying patients as was the case with the Eye and Ear Clinique. But the point having been raised, it would seem that the association might find it desirable to investigate the nature of the advertisements issued by various special hospitals and should not hesitate to call the attention of the medical staff of such institutions to anything that might be deemed objectionable in the manner or form of such advertisements.

The General Medical Council some time back requested the government to take steps for the appointment of a Royal Commission to inquire into the evil effects produced by the unrestricted practice of medicine and surgery by unqualified persons. On receipt of this communication the lord president of the council appealed in the first instance to the Local Government Board, the Scottish office, and the Irish government, asking that circulars might be addressed to the medical officers of health of each country inviting their opinion as to whether the practice of medicine and surgery by unqualified persons was increasing and as to its effects upon the public health. Replies to the inquiries have been furnished by over 1,600 officers, and these have been summarized for each division of the kingdom. In each division the summary deals with quacks in classes as herbalists, bone setters, dentists, oculists, and so on through the somewhat wide range of their various pretensions. A prominent place in the replies from all three divisions of the kingdom is given to the evils arising from the practice of midwifery by unqualified persons, but it is only in England that attention is specially directed to the proceedings of abortionists, whose practice is said to be "increasing considerably in many parts of the country," and where "advertisements of abortifacients appear in newspapers to an increasing extent." Next to the abortionists perhaps the chief stress is laid upon the doings of "bone setters." The reports show that their violent manipulations have done real injury, and they undertake the cure of cancer cases with disastrous results. A good deal is said of the treatment of eye disease by unqualified persons, especially by those assuming such titles as "ophthalmologist" or "qualified ophthalmic optician" or placing such letters as F. I. O., F. S. M. C. (Lond.) after their names and thus leading the public to believe that they are fully qualified medical practitioners. The summary for England states that unqualified practice of this kind is strongly condemned in all quarters and that eyesight has been seriously injured in many cases, while such conditions as glaucoma have not been recognized and ophthalmia neonatorum has been treated with disastrous results. The report serves to exhibit in a striking manner the need for the appointment of a Royal Commission, the only body by which the truth in relation to the subject could by any possibility be brought home to the comprehension of the public, and before which the accuracy of such statements as those made by the medical officers of health could be investigated and established. A belief in quacks and quackery is by no means confined to the illiterate. It is possible that the sale of proprietary medicines is largely among the well to do, for the expense incurred in advertising them must be great and the price must consequently be comparatively high, although it is well known that the drugs contained in them are seldom as expensive as the wrapping paper in which they are put up, and that the contentions made on their behalf are absolutely without a shadow of foundation.

Among the Parliamentary candidates for the forthcoming election are eighteen medical men, thirteen of whom were members of the last Parliament. Up to the present the following have been elected: Dr. Christopher Addison for Hoxton (Liberal) and Mr. J. Dillon, Mr. A. Lynch, and Dr. C. O'Neill, all Nationalists, in Ireland. Sir William J. Collins has lost his seat by a very small number of votes. The other results are not yet declared, but it is probable that the new Parliament will be even less represented by members of the medical profession than the old one.

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Therapeutical Notes.

The Treatment of Digestive Fever in Children.—Comby (*La Tribune médical,* September 24, 1910; through *Revue de thérapeutique,* November 15, 1910) considers digestive fever to be caused by intestinal fermentation. The patient should accordingly be put on a strict diet, rich meats, wine, sauces, and highly spiced articles of food being interdicted. To render the gastrointestinal tract aseptic and increase digestive activity, he prescribes the following:

I.

℞ Sodium bicarbonate,	gr. v;
Magnesium oxide,	gr. iv;
Benzonaphthol,	gr. iii;
Pepsin,	gr. iss;
Pulverized nux vomica,	gr. ⅓ to gr. ½.

M. ft. pulv. No. 1.

Sig.: One or two powders daily.

II.

℞ Calomel,	gr. ⅙;
Sugar of milk,	gr. v.

M. ft. pulv., No. 1.

Four or five to be given during the day if the child's tongue is foul.

Treatment of Nasopharyngeal Catarrh.—Ignatz Moskovitz (*Pester medizinische-chirurgische Presse,* No. 32, and *British Medical Journal,* December 3, 1910) points out the great importance of effective treatment of nasopharyngeal catarrh. In about two years he has treated the condition by spraying the nose from the throat with a 5 per cent. menthol petrolatum solution in a spray. The spray is passed behind the soft palate, first on one side, then on the other, and emptied, the patient meanwhile holding his head in the upright position. The head is then bent so that the fluid passes into the nasal cavity of the corresponding side, and flows out from the nostril in a stream or in drops according to the amount of swelling in the nasopharynx and the resistance in the nostril. By this means the oily solution comes in contact with the whole of the mucous membrane of the nose and throat more completely than when it is injected up one nostril and passes down the other, and, in addition, the danger of its being pressed into the Eustachian tube or the accessory nasal cavities is altogether avoided. The patients experience great relief from the treatment. When the mucous membrane is greatly congested blood may appear in the sputum, which is only expelled with much hawking. The bleeding cannot be the result of mechanical injury by the spray, whose cannula ends in a rounded glass knob, but, in the author's opinion, is caused by the action of the menthol, which increases the hyperæmia to the point of affluxion, and this opinion is supported by the fact that blood no longer appears after the third injection. When the bloody sputum has been expelled the patient feels as if he had got rid of a heavy load, and more striking still is the effect upon the hearing, which becomes more acute, while distressing noises in the ears cease.

Iodine in the Treatment of Wounds of the Hands.—In a communication to the French Academy of Medicine, which was published in the *Revue de thérapeutique médico-chirurgicale* and abstracted in *The Practitioner* for December, 1910, Professor Reclus dealt with the treatment of wounds of the hand, a matter of capital importance since the law about accidents at work was passed. The workman's hand is most often hard, cracked, coarse and covered with blackish grime containing grease, epidermal débris, and dust in which germs grow apace. The first idea on antiseptic lines is to disinfect vigorously by means of ether, turpentine, benzin or petrol, following up with soap and hot water. Such treatment is usually ineffective, and inflammation sets in in spite of any sort of antiseptic dressing. The new procedure is infinitely easier. The wounded area is swabbed with tincture of iodine. Cotton held in a forceps is soaked in tincture of iodine, and with this the wound itself and the skin immediately around it is painted over. The spirit is allowed to evaporate and as soon as the surface is dry the wound is covered with an aseptic pad and a layer of absorbent cotton kept in place by a bandage. The dressing is renewed in the evening or on the following day, after which it does not require changing for three or four days. The preliminary washing, brushing, and scraping of the wound is not only unnecessary but positively harmful. In the first place such attentions spread the pathogenic germs more widely, and in the next the penetration of the iodine with the tissues is hindered when these are saturated with liquid. If a wound has been already cleaned up it must be well dried with gauze before applying the iodine. An essential condition is that the tincture of iodine must be fresh. [It should be borne in mind that the tincture of iodine of the *Pharmacopée française* is a simple 10 per cent. solution of iodine in alcohol, and contains no potassium iodide as does the U. S. P. tincture.—ABSTRACTER.] At the end of a week it must be disqualified as too old. Little by little it loses some of its qualities, and even becomes hurtful to the tissues. With the fresh tincture there is no corrosive effect and no pain. The patient experiences a feeling of warmth, tingling, and pricking, but no more. For military surgery, especially for advanced parties, it was found a godsend in the Russo-Japanese war. Walther has shown that in less than seven minutes the iodine deposited in the epidermis has sterilized down to the deepest layer of the dermis. In wounds about the hands this effect is of great value. Healing is sometimes slow, but goes on steadily without exudation and adhesions in the numerous tender sheaths. Passive movements are easily kept up during the time of healing.

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THE ABUSE OF MEDICAL CHARITY.

This is an old subject and a matter with which the medical profession has had to contend for many years. Not much progress has been made in lessening the imposition of the comparatively prosperous upon the charity of physicians who serve institutions, but something has been accomplished in New York by the Charity Organization Society and by a few of the hospitals and dispensaries themselves, and now a movement has been started by the Chicago Medical Society for the regulation and improvement of institutional medical charity from which more may perhaps be expected.

Money is required to carry on such a movement as our Chicago brethren have undertaken, and we understand from a pamphlet issued by the society's Committee on the Abuse of Medical Charities that funds have been pledged generously. It is recognized that the first expense will fall upon the medical profession, but it is hoped and rather expected, we infer, that before very long the public itself will grant material aid, if indeed it does not assume the entire cost. And that is no more than right, for the pretenders to poverty who deceive physicians wrong also their fellow citizens in general.

Much of the abuse comes from the thirst for "clinical material" on the part of teachers, and to that extent at least the profession has itself to blame; but the committee take the ground that plenty of such material is to be had among patients who pay something for medical treatment. We are inclined to think that this is true, for there are many individuals among the wealthy as well as among the destitute who rather enjoy what they regard as the distinction of being afflicted physically in such a manner as to render them interesting to physicians. Notoriety in any form is dear to the hearts of some of us mortals.

But to stop imposition is not the sole object of our Chicago friends. The movement was started, they say, with two ends in view, the elimination of economic abuse and the improvement of the free treatment service. They realize that its breadth grows as its complexity and importance are recognized. But they say that what they do not understand to-day they propose to understand to-morrow, and they expect the cooperation and study of many persons inside and outside the profession for the complete understanding of the problem.

THE TEACHING OF LATIN.

There is, and there always has been so far as our memory goes back, something radically wrong about the way in which Latin and Greek are taught in this country. The graduate of a European university usually possesses an excellent knowledge of those languages and takes pains to maintain it for the term of his life. He has a living interest in the writings of the classical authors and can quote them aptly and without hesitation. The American graduate, on the other hand, seldom ventures upon such quotations and is likely to flounder pitiably if he attempts them. He has, moreover, only the flimsiest grasp on the part played by the languages of antiquity in the constitution of his own mother tongue and in the determination of its effective employment. Consequently his English becomes slipshod and he soon grows ripe for taking part in the enactment of statutes destined to puzzle the courts to construe. The only feeling that he has in regard to his Latin and Greek is one of relief at being rid of them. Certainly this is not a creditable state of things, and it bodes ill for the retention of the classical languages in our curricula. The man has derived nothing "practical" from his study of them and is ready to join in the cry that they should be dropped, even if he dimly realizes at times that their abandonment is but a step toward that condition in which only one thing will be studied in our schools and colleges—the art of making money.

We do not believe that there is in the American mind itself anything so grotesque as to make it fairly chargeable with that relapse into a form of barbarism with which we are threatened. The trouble comes from the idiotic way in which the ancient languages are taught in our schools, as has lately been set forth with most remarkable force and clearness by President E. D. McQueen Gray, of the University of New Mexico, in a pamphlet entitled *Latin in the Secondary School,* published in the educational series of the university's bulletins (Albuquerque, December, 1910). Dr. Gray combats the demands of the "practical" men who are clamorous for the dropping of Latin from the educational course, but he states their arguments with exceptional clearness and fairness and even grants that the present unsatisfactory methods of teaching Latin go far to justify them. He maintains that the value of a knowledge of Latin is not "cultural" in the main, but that there is no more profitable way of acquiring exact knowledge of one's own language than by studying it in relation to another. It is the common experience, he remarks, of all who have learned a foreign language (especially one which, like Latin, French, or German, is intimately connected structurally and historically with English) that they have thereby extended their knowledge of their own in a way that does not otherwise offer itself. The modern languages are well taught, says Dr. Gray, and he asks why Latin should not be taught in the same way. We commend the pamphlet to the attention of everybody interested in problems connected with education, and we feel sure that medical men in general might study it to advantage.

SALVARSAN—EHRLICH-HATA "606."

Great caution should be used in giving the preparation generally known as "606," but soon to be furnished under the name of salvarsan. The cases should be carefully selected; the diagnosis established beyond the possibility of doubt, not only by the ordinary means usually employed, but by the Wassermann test; and cases of severe affections of the nervous system, organic diseases of the heart and bloodvessels, and optic nerve atrophy, either entirely excluded from treatment or, when resulting from syphilis, carefully watched. The increase of temperature which follows the administration of "606" is accompanied with variable increased blood pressure, and therefore patients with weak hearts or poor circulation must be carefully watched if not excluded. The kidneys, as well as the eyes, heart, lungs, and liver, should be carefully examined, and where severe organic lesions exist the patient should be kept under observation for a sufficient time to determine the advisability of using the remedy if at all.

Twelve thousand cases had been treated up to November 1st, with fourteen deaths reported. Professor Ehrlich states that, had proper precautions been taken, most if not all of these deaths would have been avoided. The patient should be kept in bed for at least three days before and after the treatment until all the symptoms, such as increased temperature, headache, pain, etc., have disappeared, and then the presence or absence of the spirochætæ should be determined by repeated application of the Wassermann test.

A word of caution should be spoken in reference to the danger of exposing the remedy to the action of the atmosphere. The tube should never be broken until immediately before it is to be used, and it should not be exposed to heat or light. The solutions should be made at the time of using, and this requires skill and patience. How to accomplish it will have to be carefully studied. Full instructions as to making the solutions, the dose, and technique for use, we are assured, will accompany each tube, and these instructions should be strictly followed. There should be no experimenting with other methods, for what will be stated in the printed instructions will have been determined by thoroughly competent men after many thousands of applications.

THE PULSE IN TYPHOID FEVER.

Since the careful descriptions given us by the older writers, the study of the pulse in typhoid fever appears to have been more or less neglected. However, the recent studies on arterial tension have brought back to notice the indications, from the standpoint of the prognosis, rendered by the pulse in this affection. Quite recently (*Gazette des hôpitaux,* November 5th) Ménard and Brodin have published an excellent article on this subject. In the first place, the pulse presents various changes, according to whether one is dealing with a young adult, a child, or an old subject. In the adult the pulse is usually accelerated; it increases in frequency during the first week, ranging between 80 to 100. In the period of full development, in mild cases, it remains at about 90; in cases of medium severity it ranges from 100 to 104, while in serious cases it reaches 116 in men and sometimes from 130 to 140 in women. It should be pointed out, however, that the pulse undergoes variations during the day; in the morning it diminishes from 10 to 12 beats, becomes still lower after a bath, and is accelerated as soon as the patient has been fed or has had a movement. There are instances where the pulse is below the normal during the entire progress of the affection or in isolated drops. This bradycardia is particularly common in the serious types of the affection.

The comparative study of the pulse and temperature shows that in the beginning the latter increases more rapidly than the pulse, while during the complications the pulse rises more rapidly than the temperature and remains rapid during convalescence after the temperature has fallen. In its frequency the pulse bears no relation to the rise in temperature, especially at the beginning of the disease, and it may be said that this is one of the fundamental diagnostic signs of typhoid fever. According to Deherain and Dubois, there is an inverse relationship between the amount of urine voided and the frequency of the pulse. During convalescence the pulse frequently increases and is very markedly governed by the general condition of the patient. Considered from the point of view of its rhythm, the pulse presents a very intense and regular dicrotism which may be merely ephemeral. Generally it is present during the entire period of full development of the disease and coexists with the rise in the temperature and low arterial tension. In the cardiac types of the affection it is wanting. Tricrotism, polycrotism, or anacrotism may also be observed. Irregularity in the beat is frequent at the period of full development and is of serious import because it indicates a bad condition of the myocardium. During convalescence arrhythmia is frequent, but has no prognostic value.

THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITRE.

The indications regarding surgical intervention in exophthalmic goître may be summed up as follows: 1. Abstention in all the mild types which are susceptible of being cured by medical treatment. 2. In the cases of medium intensity, after a short trial with medical treatment without improvement, thyreoidectomy should be resorted to. The cases of medium intensity are really the true field of action as far as surgery is concerned. 3. The serious types are also in the domain of surgery, but the operation should be undertaken only after a careful and appropriate preparatory treatment. The technique to be followed should be that of Kocher or the Mayos. The contraindications are infrequent, but interference should not be undertaken where the patient presents marked cachexia. The same may be said of renal and hepatic lesions and especially those of the heart, such as myocarditis.

Although Kocher and the majority of the German school resort almost exclusively to local anæsthesia, it is perfectly safe, at least in cases of medium intensity, to employ general narcosis, preferably with ether. For the majority of surgeons, the procedure to be employed should be a unilateral thyreoidectomy, removing the lobe presenting the greatest degree of hypertrophy, that is to say, generally the right lobe. The operation may be completed by ligation of the superior thyreoid artery on the opposite side. This gives, according to Berg's statistics, eighty per cent. of cures, instead of the thirty-seven per cent. observed when simple thyreoidectomy without ligation is done. At the beginning of the milder forms of the disease ligation of the two thyreoid arteries alone may be done, as recommended by Mayo, and this is certainly without danger and frequently sufficient to control the development of the process.

The operative mortality has strikingly diminished in recent years, and at the present time, according to some twenty sets of statistics from different sources, death occurs in not more than five per cent. The statistics of some operators show that their mortality has been only from two to three per cent. Alamarthine, at the French Congress of Surgery, held in October of this year, gives the following summary of twenty-five sets of statistics: There were 669 cures or marked improvements, 174 slight improvements or none at all, and 63 deaths from operation; in other words, 669 favorable results and 237 bad. Consequently, it may be said that at the present time operative procedures give seventy per cent. of successful outcomes. Such results are very encouraging, although quite in contradiction of the present opinion of many internists, who still consider an operation as a makeshift to be reserved only for the most advanced and serious cases.

DEATH CERTIFICATES.

It is getting to be more and more generally recognized that our mortuary statistics are materially vitiated by the employment of indefinite and otherwise objectionable terms to designate causes of death. The precise term that it is best to use on a death certificate does not always readily present itself to the physician's mind. The Bureau of the Census has recently issued a useful little pocket book, entitled *Physicians' Pocket Reference to the International List of Causes of Death,* which cannot fail to be of material assistance to the practitioner. As it consists of only twenty pages, it can easily be carried in the waistcoat pocket or within the visiting list or other pocket book.

THE ITINERANT VENDOR OF NOSTRUMS.

In our issue for December 10th, in an article entitled The Itinerant Vendor Danger, we commended the activity of the State Board of Health of Illinois in prosecuting itinerant hawkers of drugs and expressed the hope that neighboring States would be stimulated to similar action. It appears, however, that only very few of the States have laws under which their officials can proceed effectively.

In fact, only eighteen States have any laws concerning itinerant vendors of medicine, and in but four of those is the State board of health or medical examining or licensing board empowered to prosecute such vendors.

THE ETHICS OF PIN STICKING.

We do not imagine that any one of our subscribers would pin a bandage in such a careless manner as to leave the point of the pin exposed for somebody to prick his fingers on; yet it is quite exceptional for us to receive a manuscript consisting of several sheets pinned together in which the point of the pin is concealed. We do not now prick our fingers, because we have grown wary, but we utter this little plaint in the interest of our inexperienced juniors. Really, some consideration for "the other fellow" should be shown even in this small matter, and our brethren should refrain from joining in the craze for giving the impression of no spare time.

News Items.

Changes of Address.—Dr. William G. Stedman, to 74 Park Avenue, Rochester, N. Y.

Dr. Francis M. Walker, to 214 Garson Avenue, Rochester, N. Y.

Dr. W. G. Eisenhardt, to 2102 North Sixth Street, Philadelphia, Pa.

Dr. Napoleon Boston, to 1819 Chestnut Street, Philadelphia, Pa.

The Hospital Graduates' Club of Brooklyn held its annual dinner at the Olde Tavern, in the borough of Manhattan, on Saturday evening, December 17th, Dr. J. Scott Wood presiding.

The Manhattan Eye and Ear Hospital has sold the property at 230 and 232 West Thirty-eighth Street, New York. These buildings have been used as a clinical hospital for some years.

Dr. Wiley Honored by the Franklin Institute, of Philadelphia.—The Franklin Institute has awarded one of the Elliott Cresson medals for "distinguished, leading, and directive work" to Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, Department of Agriculture, for his work in the fields of agricultural and physiological chemistry.

The Dedication of the New Science Hall at Howard University, Washington, D. C., took place on Tuesday, December 13th. The principal addresses were delivered by Dr. Henry S. Pritchett, president of the Carnegie Foundation, Dr. William H. Welch, of Johns Hopkins University, and Booker T. Washington, LL.D., of the Tuskegee Institute.

The Gaynor Hospital Fund.—The money received in response to the appeal of the Thanksgiving Committee of the Gaynor Hospital Fund was presented to the Sisters in charge of St. Mary's Hospital, Hoboken, on Sunday afternoon, December 18th. The amount of the fund was $15,184.73. Of this amount $5,000 will be used for the endowment of a bed in the hospital to be known as the Gaynor bed.

The Medical Society of the County of Chautauqua, N. Y., held its annual meeting in Jamestown, on Tuesday, December 13th. Officers for the ensuing year were elected as follows: President, Dr. E. A. Scofield, of Bemus Point; vice-presidents, Dr. H. A. Eastman, of Jamestown; Dr. George E. Smith, of Fredonia; secretary-treasurer, Dr. J. W. Morris, of Jamestown; censors, Dr. E. M. Scofield, of Jamestown; Dr. V. M. Griswold, of Fredonia; delegate to the State convention, Dr. Edgar Rood, of Westfield.

The American Association for the Advancement of Science will meet in Minneapolis, during convocation week, beginning on December 27th. The retiring president is Dr. David Starr Jordan, of Stanford University; President, Professor A. A. Michelson, of the University of Chicago; permanent secretary, Dr. L. O. Howard, of the Smithsonian Institute, Washington, D. C.

The American Association of Anatomists will hold its next meeting at Cornell University, Ithaca, N. Y., on December 28th, 29th, and 30th. The president of the society is Dr. George A. Piersol, professor of anatomy at the University of Pennsylvania, and the secretary and treasurer is Dr. G. Carl Huber, director of the Histological Laboratory and professor of histology and embryology at the University of Michigan, Ann Arbor.

A New Hospital in the Bronx.—A new hospital, which will contain about a hundred beds, will be erected in the Tremont section of the Bronx in the near future. The organizers, who have secured a certificate of incorporation, are all New York physicians, and they constitute the board of directors. They are as follows: Dr. Abraham Jacobi, Dr. Willy Meyer, Dr. Samuel W. Lambert, Dr. H. H. M. Lyle, Dr. Wolff Freudenthal, and Dr. George W. Jacoby.

The Caledonian Hospital to be Established in Flatbush.—The Caledonian Society has selected No. 53 Woodruff Avenue, Flatbush, Brooklyn, as a site for their hospital. Permission to establish the hospital has been granted by the State Board of Charities. The association has $25,000, a $15,000 equity in realty, and pledges for all the money that is needed. The society is also planning to establish a woman's dispensary at 84 Cook Street Brooklyn.

Civil Service Examinations.—Among the positions for which the New York State Civil Service Commission will hold examinations on January 14th are: Laboratory assistant, State Cancer Laboratory, Buffalo, $720 to $1,000; medical superintendent, Erie County Home and Hospital, $2,000. The latter position is open to men only, who are residents of Erie County. For detailed circular and application blank address the State Civil Service Commission, Albany, N. Y.

A New Hospital for Lakewood, N. J.—It is announced that a large, modern hospital and nurses' home will be established in Lakewood in the near future. The land for the proposed buildings has been given by Captain A. M Bradshaw and consists of a large plot of ground north of the village, near the Lakewood Hotel. According to present plans, the new hospital will be built in sections, one section to be built and equipped before work is begun on another, and the estimated cost is $200,000. Those who are interested in the scheme are Mr. George J. Gould, Mr. Paul Rainey, Mr. H. L. Herbert, and others. The hospital is to be known as the Kimball Memorial Hospital, in memory of Dr. Paul T. Kimball, who died suddenly in Lakewood a short time ago.

The Southern Surgical and Gynæcological Association.—The twenty-third annual meeting of this association was held in Nashville, Tenn., on December 13th, 14th, and 15th. Officers for the ensuing year were elected as follows: President, Dr. Rudolph Matas, of New Orleans; vice-president, Dr. Guy L. Hunner, of Baltimore; secretary, Dr. W. D. Haggard, of Nashville; treasurer, Dr W. S. Goldsmith, of Atlanta. The following honorary members were also elected: Sir Thomas Myles, of Dublin; Mr. Mayo Robeson, of London; Mr. Arbuthnot Lane, of London; Mr. B. G. A. Moynihan, of Leeds; Mr. Robert Jones, of Liverpool; Mr. H. J. Stiles, of Edinburgh; Mr. Rutherford Morrison, of New Castle-on-Tyne. Washington was selected as the next place of meeting.

Personal.—Dr. L. P. Posey, of Philadelphia, has been appointed a member of the State Board of Medical Examiners, representing the State Homœopathic Medical Society, to succeed Dr. C. S. Middleton, resigned.

Dr. D. Albert Rose, of Toronto, has been appointed superintendent of the tuberculosis sanatorium established at Rainbow Lake, N. Y., by the Independent Order of Foresters.

Dr. Frederic S. Lee, professor of physiology in Columbia University, has been appointed head of the department of physiology, to succeed Dr. John G. Curtis, who resigned some time ago.

Dr. Warren B. Hill, of Milwaukee, has been elected president of the new board of trustees of the Emergency Hospital, and Dr. Louis Fuldner, secretary.

The Medical Society of the County of New York.—This society will hold its December meeting on Tuesday evening, December 27th, instead of on Monday, the usual date of meeting. The chief feature of the programme will be a paper by Dr. Sigmund Pollitzer on the Ehrlich-Hata Preparation "606" in Syphilis, which will be discussed by Dr. John A. Fordyce, Dr. William S. Gottheil, Dr. Homer F. Swift, and others.

Society Meetings for the Coming Week:

TUESDAY, *December 27th.*—New York Dermatological Society; Metropolitan Medical Society of New York City; Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); New York Medical Union; New York Otological Society. Medical Society of the County of New York.

WEDNESDAY, *December 28th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Surgical Society.

THURSDAY, *December 29th.*—Brooklyn Society for Neurology.

The Medical Society of Wayne County, N. Y., held its annual meeting in Lyons, on Tuesday, December 13th. It was decided to hold a special meeting of the society on Thursday morning, December 22d, to meet representatives of the State Charities' Aid Society to devise ways and means to obtain a tuberculosis hospital for Wayne County. The following officers were elected for the ensuing year: President, Dr. H. L. Chase, of Palmyra; vice-president, Dr. C. J. Plumb, of Red Creek; secretary and treasurer, Dr. M. A. Veeder, of Lyons; censors, Dr. M. E. Carmer, of Lyons; Dr. G. D. York, of Newark, and Dr. D. G. Winchell, of Rose; delegates to the state convention, Dr. T. H. Hallett, of Clyde, and Dr. D. G. Winchell, of Rose.

The Society of Medical Jurisprudence, at its annual meeting, held in New York on Monday evening, December 12th, elected the following officers for the ensuing year: President, Alfred E. Ommen; vice-president, Reynold Webb Wilcox, M. D.; recording secretary, Oscar W. Erhorn; corresponding secretary, Charles P. Blaney; treasurer, John C. West. An important part of the proceedings was the adoption of a resolution looking toward an amendment of the law governing the criminally insane. Among those who spoke were Dr. William A. White, superintendent of the Government Hospital for the Insane, Washington, D. C., and John Brooks Leavitt, LL. D., chairman of the committee of the New York Bar Association on the Commitment and Discharge of the Criminally Insane, the subject of his address being The Discharge of Lunatics by Habeas Corpus Proceedings.

A Merger of Two Minnesota Medical Associations Proposed.—The thirtieth anniversary of the founding of the Minnesota Valley Medical Association and the Southern Minnesota Medical Association was celebrated on December 6th at a joint meeting of the two organizations. The question of consolidating the two associations was discussed at this meeting. All the delegates in attendance were in favor of the plan, but voting on the proposition was postponed until next summer. The Minnesota Valley Medical Association elected the following officers: President, Dr. L. A. Fritchie, of New Ulm; first vice-president, Dr. H. B. Aitken, of Le Sueur Centre; second vice-president, Dr. J. J. O'Hara, of Janesville; secretary, Dr. A. G. Liedloff, of Mankato; treasurer, Dr. G. F. Merritt, of St. Peter.

Laboratory Work at the New York Postgraduate Medical School.—The New York Postgraduate Medical School and Hospital is making arrangements, on the completion of its new buildings, to greatly extend the scope of its laboratory work, both as an adjunct to the increased hospital service, which will consist of approximately four hundred beds, and as regards departments for teaching pathology, bacteriology, and clinical organic chemistry. In addition to the laboratory for tropical medicine, in collaboration with the Medical Departments of the Army and Navy, it is proposed to provide ample space for separate laboratories for pathology, bacteriology, and chemistry under one general direction. For these a staff of three competent men is sought, at salaries to range from $1,800 to $3,000 a year. The work will begin on October 1, 1911. Applications for positions should be made as early as possible, to Dr. Jonathan Wright, 44 West Forty-ninth Street, New York.

The Elmira, N. Y., Academy of Medicine held its annual meeting on Wednesday evening, December 7th, and elected the following officers: Dr. Charles Erway, president; Dr. Alexander Mark, vice-president; Dr. John A. Bennett, secretary; Dr. C. G. R. Jennings, treasurer; Dr. Abraham Lande, librarian; Dr. Arthur W. Booth, Dr. C. W. M. Brown, Dr. G. V. R. Merrill, Dr. A. H. Baker, and Dr. Ross G. Loop, members of the board of trustees; Dr. C. W. M. Brown, Dr. Robert P. Bush, and Dr. A. G. Westlake, censors.

The American Dermatological Association will hold a brief winter session at the Academy of Medicine in New York on Thursday afternoon, December 29th. The meeting is to be held at the invitation of the New York members of the association and will be devoted entirely to the exhibition of rare and interesting cases. The local committee consists of Dr. S. Pollitzer, chairman, Dr. John A. Fordyce, and Dr. Howard Fox. Before the meeting the New York members will entertain the visiting members at a luncheon at the Yale Club. In the evening many of the visitors will attend the stated meeting of the Academy of Medicine, held under the auspices of the Dermatological Section, at which an attractive programme on the subject of leprosy is offered, and some of them will take part in the proceedings.

The Prevention of Blindness.—The National Society for the Prevention of Blindness and the Conservation of Vision was organized in New York on Saturday, December 17th, at a conference held in the United Charities' Building. The object of this organization is to unify the work which is being carried on by separate organizations in various states and localities throughout the Union. The meeting was called by Dr. Park Lewis, chairman of the Committee on the Prevention of Blindness of the American Medical Association. A resolution was passed at this meeting recommending that measures be taken to secure state legislation for the training, registration, licensing, supervision and control of midwives, for the reason that half the births in cities are attended by these women, many of whom are ignorant and untrained. Dr. Lewis, in his opening address, explained the nature and scope of the campaign against preventable blindness. Other speakers were: Dr. Mark D. Stevenson, of Akron, Ohio; Dr. C. P. Franklin, of Philadelphia, chairman of the Trachoma Committee of the Bureau of Municipal Research, and Dr. Cressy L. Wilbur, chief statistician of the United States Bureau of Vital Statistics, who advocated immediate notification and later registration of the facts for the birth record of the whole country. Five of the leading oculists of New York and Philadelphia have approved of the project of this national organization.

The National Confederation of State Medical Examining and Licensing Boards will hold its twenty-first annual meeting in Chicago, on Tuesday, February 28, 1911, at the Congress Hotel. An important feature of the programme will be a "symposium" on the State Control of Medical Colleges. Ten papers on the subject will be presented from the points of view of State, law, medical colleges, State medical examining and licensing boards, and the medical profession. The chief object of this "symposium" is to determine, as far as possible, the feasibility of placing medical colleges under State control. Other subjects to be discussed at this meeting are: A report of the special committee on clinical instruction; a report by the special committee on a proposed materia medica list; and a report on the paper presented at the St. Louis meeting of the American Medical Association by Mr. Abraham Flexner, of the Carnegie Foundation for the Advancement of Teaching. There will be some special papers on such subjects as the regulation of medical colleges, and the necessity of establishing a rational curriculum for the degree of doctor of medicine. These topics are all of practical interest to the profession at large, as well as to medical colleges and medical examining boards. A cordial invitation to this meeting is extended to all members of State Examining and Licensing Boards, teachers in medical schools, colleges and universities, delegates to the Association of American Medical Colleges, to the Council on Medical Education of the American Medical Association, and to all others interested in securing the best results in medical education. The officers of the confederation are: President, Dr. J. C. Guernsey, of Philadelphia; secretary and treasurer, Dr. George H. Matson, of Columbus, Ohio

A "Symposium" on Leprosy will be presented at a stated meeting of the New York Academy of Medicine, to be held on Thursday evening, December 29th, under the auspices of the Section in Dermatology. The following programme has been arranged: Presentation of Cases, by Dr. Bronson, Dr. Bulkley, Dr. Dade, Dr. Fischer, Dr. Fox, Dr. Oulmann, Dr. Parounagian, Dr. Winfield, and Dr. Wise; Historical Sketch of Leprosy in the United States, by Dr. S. Pollitzer; The Symptomatology of Leprosy, by Dr. Howard Fox; Experimental Leprosy and Its Bearing on Serum Therapy, by Dr. Charles W. Duval, of Tulane University, New Orleans; The Sociological Aspects of Leprosy and the Question of Segregation, by Dr. Isadore Dyer, of New Orleans. Among those who will take part in the discussion are Dr. Brinckerhoff, late of the M. H. S., Hawaii; Dr. White, of Boston; Dr. Schamberg, of Philadelphia; Dr. Pusey, of Chicago, and Dr. Montgomery, of San Francisco.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 17, 1910:

	December 10th.		December 17th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	549	154	612	151
Diphtheria and croup	281	26	269	23
Measles	131	4	180	5
Scarlet fever	251	7	253	14
Smallpox	..	..	..	..
Varicella	149	..	133	..
Typhoid fever	49	16	63	9
Whooping cough	49	4	78	5
Cerebrospinal meningitis	6	8	8	8
Total	1,465	219	1,596	215

The Health of Philadelphia.—During the week ending December 3, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 21 cases, 2 deaths; scarlet fever, 42 cases, 3 deaths; chickenpox, 37 cases, 0 deaths; diphtheria, 94 cases, 15 deaths; measles, 71 cases, 2 deaths; whooping cough, 17 cases, 1 death; pulmonary tuberculosis, 103 cases, 52 deaths; pneumonia, 57 cases, 73 deaths; puerperal fever, 0 cases, 2 deaths; erysipelas, 10 cases, 1 death; mumps, 1 case, 0 deaths; tetanus, 1 case, 0 deaths; trachoma, 1 case, 0 deaths; trichiniasis, 3 cases, 0 deaths. There were 8 deaths from tuberculosis other than that of the lungs, and 13 from diarrhœal diseases under two years of age. There were 39 stillbirths: 24 males, and 15 females. The deaths from all causes numbered 546, in an estimated population of 1,598,400, corresponding to an annual death rate of 17.76 in a thousand of population.

Surgeon General Stokes Before Congress.—Surgeon General Stokes, of the United States Navy, appeared before the Committee on Naval Affairs of the House of Representatives recently to give evidence as to the plans which he had devised for the improvement of the Service. He recommended the establishment of a Naval Medical Reserve Corps, somewhat along the line of the Army Medical Reserve Corps. He stated that he had communicated with a number of eminent surgeons, who had signified their willingness to accept appointments as commissioned officers in a Naval Medical Reserve Corps. These appointments carry with them commissions and titles, but no pay, except when in active service. The surgeon general said that the plans should be perfected for the establishment of two main naval hospital bases, one on the Atlantic and one on the Pacific Coast. Each of these base hospitals should have a capacity of four thousand beds. Each battle fleet of sixteen vessels would have four hospital ships attached, which could on an average remove two hundred and fifty dead and wounded men from each ship in a total of five hours for the entire fleet. The surgeon general suggested Waikiki, Hawaii, where several large hotels are available, as a proper point for the Pacific base, but had no suggestion to offer as to the Atlantic base. He did not ask for any appropriation, as all that he desired now was the passage of a bill authorizing the elaboration of the plans so that they might be put into execution on the outbreak of war without further legislation. The recommendations seemed to be favorably received by the Committee.

Vital Statistics of New York.—During the week ending December 10, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,434, corresponding to an annual death rate of 15.58 in a thousand of population, as compared with a rate of 16.37 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 16.18; the Bronx, 16.02; Brooklyn, 14.98; Queens, 12.48; Richmond, 18.68. There were 130 stillbirths. The deaths of children under five years of age numbered 335, of whom 242 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 40; over five years of age, 44. There were 154 deaths from pulmonary tuberculosis, 25 from bronchitis, 153 from pneumonia, 87 from bronchopneumonia, 113 from Bright's disease, 157 from organic heart diseases, and 90 from congenital debility and malformations. There were 15 deaths from suicide, 4 from homicide, and 62 due to accidents. Nine hundred and ninety-three marriages and 2,374 births were reported during the week.

The Health of Chicago.—During the week ending December 10, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 45 cases, 7 deaths; measles, 76 cases, 2 deaths; whooping cough, 19 cases, 1 death; scarlet fever, 160 cases, 9 deaths; diphtheria, 653 cases 24 deaths; chickenpox, 115 cases, 0 deaths; tuberculosis, 131 cases, 71 deaths; pneumonia, 33 cases, 136 deaths. There were 3 cases of infantile paralysis, one of diarrhœal diseases, 4 of German measles, one of cerebrospinal meningitis, and 48 of contagious diseases of minor importance recorded, making the total 1,289, as compared with 969 for the preceding week and 681 for the corresponding week last year. The deaths under two years from diarrhœal diseases numbered 27, and there were 29 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 159 of whom 95 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 604, corresponding to an annual death rate of 14.4 in a thousand of population, as compared with a rate of 15.6 for the preceding week and 13.9 for the corresponding period last year.

The Origin of the Double Red Cross.—Although the double red cross has been used in America for more than four years as the international emblem of the crusade against tuberculosis, probably few people know how it originated. The following history of the symbol is given by the National Association for the Study and Prevention of Tuberculosis: It has been ascertained that the double red cross was first suggested as the symbol of the International Antituberculosis Association in Berlin in October, 1902. The proposer of the symbol was Dr. G. Sersiron, of Paris, who is now associate secretary of L'Association Centrale Française Contre la Tuberculose. Dr. Sersiron's proposal was adopted at the Berlin meeting and a movement was at once started to secure official recognition and protection for the double cross from European governments. The double red cross is similar in shape to a cross used frequently in the Greek Catholic Churches, and also to the Lorraine Cross of France. The National Association for the Study and Prevention of Tuberculosis in the United States has adopted the proportions of nine for the length of the cross to five for the width of the arms, with a space one ninth of the length between the arms. In 1902, when the double red cross was adopted, there were not more than a half-dozen associations for the prevention of tuberculosis organized on a wide basis. To-day under the banner of the antituberculosis crusade, associations have been formed in almost every civilized country in the world. Even China is beginning to take action along this line, while Turkey, India, Japan, the Philippines, South Africa, Australia, Iceland, and in all of the European countries active societies are at work. In the United States, from four independent associations in 1902, the double red cross now enlists a carefully organized national movement under which are affiliated more than thirty State bodies and four hundred and twenty local societies. If to these agencies are added the local, State, and national governments enrolled in antituberculosis work, the double red cross becomes the symbol of the greatest organized campaign for the prevention of disease that the world has ever known.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 15, 1910.

1. Phylogenetic Association in Relation to Certain Medical Problems, By G. W. Crile.
2. Tuberculosis Problem as Applied to Children, By John B. Hawes, 2d.
3. Therapeutics of Light, By Herbert McIntosh.
4. Extraperitoneal Cæsarean Section, By James Lincoln Huntington.

1. **Phylogenetic Association in Relation to Certain Medical Problems.**—Crile explains the scope of his paper by a concrete example: When a barefoot boy steps on a sharp stone there is an immediate discharge of nervous energy in his effort at escape from the wounding stone. This is not a voluntary act. It is not due to his own personal experience (i. e., his ontogeny), but is due to the experience of his progenitors during the vast periods of time required for the evolution of the species to which he belongs, i. e., his phylogeny. The wounding stone made an impression upon the nerve receptors in the foot similar to the innumerable injuries which gave origin to this nerve mechanism itself during the boy's vast phylogenetic or ancestral experience. The stone supplied the phylogenetic association, and the appropriate discharge of nervous energy automatically followed. If the sole of the foot is repeatedly bruised or crushed by the stone, shock may be produced. If the stone is only lightly applied, then there is also a discharge of nervous energy from the sensation of tickling. The body has had implanted within it in a similar manner other mechanisms of ancestral or phylogenetic origin whose purpose is the discharge of nervous energy for the good of the individual. He then discusses the origin and mode of action of some of these mechanisms including certain phases of anæsthesia, and concludes: The brain cells have existed during eons of time and amid vicissitudes of change with perhaps less alteration than the crust of the earth. Whether lodged in man or in the lower animals, they are related to and obey the same general biological laws, thus binding them, that is, ourselves, to the entire past and perform their function on the law of phylogenetic association. So long have we directed our attention upon tumors, infections, and injuries that we have not sufficiently considered the vital force itself. We have viewed each anatomical and pathological part as an entity, and man as an isolated phenomenon in nature. May we not find in the law of adaptation under natural selection, and the law of phylogenetic association, the master key that will open to us the explanation of many of the pathological phenomena as they have already explained many normal phenomena? And may medicine not correlate the pathological phenomena of the sick man with the forces of evolution, as the naturalists have correlated the phenomena of the sound man—and disease as well as health be given its evolutionary setting?

2. **Tuberculosis Problem as Applied to Children.**—Hawes speaks about the tuberculosis problem in Massachusetts. He says that there is practically no place in Massachusetts where young children with open pulmonary tuberculosis can be sent and properly cared for. There are not more than one or two open air schools where the many thousand anæmic and rundown "pretuberculous" children can get fresh air and sunshine in addition to a knowledge of reading, writing, and arithmetic. Although there is sufficient legislation on the subject, there is at present very little instruction given to young children on hygiene, right living, and the prevention of tuberculosis and other diseases. As remedies for this state of affairs, and as an outline for future work of antituberculosis societies, he suggests the following: Every effort should be made to get the State and local authorities to provide adequate facilities for the care of children with pulmonary tuberculosis. One effective way of doing this is to make application for the admission of all such cases to the State sanatoria. The strongest argument which the board of trustees of the State sanatoria can use before the legislature is a long list of applications from children for whom there is no place, nor for whom, with the present appropriation, can a place be provided. Earnest and intelligent cooperation with the local school board to provide an outdoor school or fresh air room for pretuberculous children; if such a school or room is established, the attention of the city legislature and board of health should be called to the good which it does. It should be insisted upon that the terms of the 1908 act, that "tuberculosis and its prevention shall be taught in our public schools," etc., be complied with. This can best be done by means of tuberculosis exhibits prepared along the lines of those now loaned by the State, placed in all the public schools, and demonstrated wherever possible by doctors, nurses or social workers.

3. **Therapeutics of Light.**—McIntosh observes that light penetrates the tissues. In so doing the chemical rays produce fluorescence of the blood and serum which is reduced or absent in pathological states, as, for example, in malaria. The action of light upon the blood stream reduces oxyhæmoglobin and thus stimulates the chemistry of the tissues, that is to say, improves metabolism. The most useful portion of the spectrum is not the heat or luminous portion, but the chemical portion. The physiological effects of light flow easily from the marked penetration of the light rays, particularly the chemical portion of the spectrum. The blue light has a peculiar field in the control which it has over pain and hyperæmia; red light by its exclusion of the chemical rays plays an important rôle in the treatment of smallpox. He gives some illustrations of the efficient action of light, of artificial sunlight, and concludes with a brief description of the apparatus employed in light therapy. The most generally useful apparatus for office use is, in his opinion, the arc lamp of 2,000 candle power. This furnishes the whole spectrum, including the ultraviolet rays, which is so important. It furnishes a tremendous volume of rich chemical rays both visible and invisible, as well as abundant heat rays. Screens may be used to furnish blue or red light. A substitute for the arc lamp is the high power incandescent lamp. Here, however, the ultraviolet rays are entirely cut off by the inclosing bulbs, and the treatment is necessarily to a large extent a radiant heat treatment. This is, of course, of great value, but manifestly inferior to a treatment which

utilizes the whole spectrum as does the arc light. Next there is the incandescent bath cabinet, a most useful apparatus, in which the nude body of the patient is exposed to the radiance of fifty or more sixteen candle power incandescent bulbs. With this apparatus it is necessary to combine certain hydriatic procedures in order to produce a suitable reaction and prepare the patient for exposure to ordinary temperatures. The arc bath cabinet is also a highly useful apparatus. This is a cabinet, six or more feet in length, and of suitable width and height. It contains a cot upon which the patient lies nude and exposed to the rays from two powerful arc lamps. It is an artificial sun bath. For dermatological uses particularly, there are lamps after the pattern of the Lortet et Genoud lamp designed to take the place of Finsen's enormous concentrators. These have quartz windows to permit the escape of the ultraviolet rays so important in most therapeutic treatments. Then there are small lamps with iron or other metal electrodes and quartz windows which are almost exclusively ultraviolet lamps. Finally, there is the Kromayer mercury vapor lamp in which a current of electricity is passed through volatilized mercury, producing a peculiar greenish blue light. This is provided with quartz windows for the egress of the ultraviolet rays. It has been used chiefly abroad for therapeutic purposes and has recently been adapted to the sterilization of potable water. It is attached to the water faucet and automatically and absolutely destroys all bacteria, rendering water thus irradiated safe for domestic purposes.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 17, 1910.

1. Metabolism in Diabetes, By GRAHAM LUSK.
2. Recent Advances in Treatment of Diabetes Mellitus, By GEORGE B. WALLACE.
3. Action of Glycol Aldehyde and Glycerin Aldehyde in Diabetes Mellitus and the Nature of Antiketogenesis, By R. T. WOODYATT.
4. Relation of the Pancreas to Diabetes, By JOSEPH H. PRATT.
5. Hairy or Black Tongue, By M. L. HEIDINGSFELD.
6. Comparative Pathology of Hyperplastic and Suppurative Ethmoiditis, By ROSS HALL SKILLERN.
7. Tuberculosis of the Ankle Joint and Tarsus, By JAMES WARREN SEVER.
8. Various Forms of Experimental Diabetes and Their Significance for Diabetes Mellitus, By J. J. R. MACLEOD.
9. Dehydration by Dietetic Measures, An Interpretation of the Karell, Oertel, and Widal Treatment of Circulatory and Renal Diseases, By A. MAGNUS-LEVY.
10. House Quarantine, By H. COHEN.
11. Treatment of Wounds. A First Article, By ALEXIS CARREL.
12. Vapor Anæsthesia Apparatus, By JAMES T. GWATHMEY.
13. Eye Strain a Cause of Exophthalmic Goitre, By GEORGE M. GOULD and A. C. DURAND.
14. Elephantiasis of Scrotum and Penis with Operation, By RAYMOND RUSS.
15. A Case of Chronic Appendicitis Simulating Neoplasm, By W. H. BOESE.

1. **Metabolism in Diabetes.**—Lusk refers to a lecture delivered by his father, the well known Professor W. T. Lusk, in 1870, on the Origin of Diabetes with some experiments regarding the Glycogenic Function of the Liver. The paper controverted the stand taken by Tavy, and held by him to this day, that the conversion of glycogen into sugar is a post mortem phenomenon. The discussion which followed the reading of the paper was opened by Dr. Austin Flint, Sr., who stated that he had two diabetic patients in whom regulation of the diet had been the only and successful treatment. Dr. Austin Flint, Jr., then described experiments he had made on the glycogenic function of the liver and gave a lucid interpretation of them. The author then reports his experience on diabetic patients, in which he found that protein yields nearly sixty per cent. of itself as sugar. He concludes that the intensity of diabetes should not be determined by the percentage of sugar in the urine, but by the relationship between the ingo of sugar plus the possible maximum of sugar production from protein as compared with the total output of sugar. This may be illustrated in the following formula modified from that given by Falta.

$$\frac{\text{Output of dextrose}}{\text{Urine N} \times 3.65 + \text{food-dextrose}}$$

This multiplied by 100 gives Falta's "coefficient of excretion," or the percentage of sugar eliminated. In other words, recognition must be given to the fact that the output of dextrose is dependent on the amount of carbohydrate ingested and also on the height of the protein metabolism. The physician can be sure that he is treating his patient properly only when he knows that he is giving him at least the thirty-five calories per kilogramme required normally, and these must be contained in materials which the patient can oxidize. Protein will not give more than ten or fifteen per cent. of this requirement of energy. To give fat in sufficient quantity requires all the arts of cookery. Here, as always, when the appetite is no longer a proper guide the physician's knowledge of the patient's requirement is the only possible resource.

2. **Recent Advances in the Treatment of Diabetes Mellitus.**—Wallace gives as treatment of severe diabetes the following: It is as a rule practically impossible to keep the patient's urine sugar-free and one should early give up the attempt. Since the main danger lies in the acidosis it is unwise to put the patient on a strict diet for any length of time. In the preliminary treatment there comes first a period of strict diet with from 75 to 100 grammes of bread; then follows one of a low protein diet, consisting chiefly of vegetables, and finally one consisting of oatmeal. Each of these is of two or three days' duration. By repeating this procedure for two or three weeks there may be obtained a lowering of acidosis to such an extent that it ceases to be an immediate danger, and there may be obtained also a clear conception of the degree of sugar tolerance. The subsequent treatment is based on the results obtained. A carbohydrate free diet can often be given for a week or so with marked general improvement. The patient is then allowed a small amount of carbohydrate, or a more prolonged oatmeal or vegetable diet may be given. Every few weeks a period of strict protein fat feeding of two or three days may be ordered, and once or twice a year a longer period, two or three weeks, should be tried. He emphasized the fact that no general rule can apply to all cases. Each case must be studied individually and only by such study can the proper line of treatment for any particular case be determined.

4. **Relation of the Pancreas to Diabetes.**—Pratt states that despite opposing theories and con-

flicting observations in regard to the relation of the pancreas to diabetes some facts have been definitely ascertained. The total removal of the pancreas always leads to a fatal diabetes. Atrophy of the pancreas produced by excluding all the pancreatic juice from the intestine is associated with a marked decrease in the limit of assimilation for sugar. Transplantation of a portion of the pancreas prevents the development of diabetes when the rest of the gland is extirpated. Lesions of the islands of Langerhans are found in most cases of diabetes. They are usually associated with changes in the acini. In the progressive atrophy which follows the occlusion of all the pancreatic ducts in dogs and cats both islands and acini are gradually destroyed. All the islands may disappear without diabetes resulting. The conclusion is justified that the pancreas has an internal function concerned with the metabolism of sugar. The nature of this function, the relation of the islands of Langerhans to the acini, the significance of histological changes in both structures, these and other problems still await solution.

5. **Hairy or Black Tongue.**—Heidingsfeld states that hairy tongue can be conveniently divided into two general classes: 1. True, idopathic, or genuine cases, characterized by well defined stable, black brown or yellow brown, thick, soft, furlike patches covered with densely intertwined hairlike filaments, easily measuring from ¼ to ½ inches in length; and, 2, false, pseudo or spurious cases, characterized by thickish, yellow brown or greenish discolorations, of unstable evanescent character, covered with a soft mushy detritus, occasionally containing short filaments measuring from ⅛ to ¼ of an inch in length. The true cases owe their origin to some anomaly of development, probably of congenital nature, in the sense that the germinal products from which they are developed are present from birth, but do not undergo growth and developmental changes until early adolescence or some later period in life. Such an origin is assumed and very generally conceded for moles, vascular, pigmented papillomatous and unilateral nævi, cutaneous horns, etc., and can be extended with equal propriety to this affection, all the more since the histopathology reveals an anomaly of development rather than any evidence of an infectious or inflammatory nature. An anomalous development and congenital origin is further evidenced by the fact that the true, idiopathic, or genuine cases are of stable character, and remain unchanged in size and form for indefinite periods, and localized to definite areas. Such would not likely be the case if they were of infectious origin or of inflammatory character resulting from local or general causes. The pseudo or spurious cases are unstable and evanescent and probably owe their origin to such local or general irritating and infectious causes as tobacco, antiseptics, astringents, syphilis, etc. The presence of the filaments is probably due to an inflammatory hypertrophy of the papillæ filiformes. The diagnosis can be easily confirmed by removing some of the grumous coating of discolored tongues by means of fine forceps, and floating it in clear water or alcohol. The hairlike filaments can then be readily seen with the naked eye. The majority of cases recorded in literature probably belong to this group. A parasitic origin for the affection could not be established on either clinical, histopathological or bacteriological grounds; it does not develop or spread clinically like a parasitic affection. Inoculation experiments were negative in the sense that the affections could not be distributed to other unaffected parts of the tongue. It failed to spread to the abrasions and excoriations of an intercurrent cancer of the tongue. The histopathology reveals chiefly anomalous structural changes, and the absence of the marked inflammatory changes generally incident to chronic and acute infectious and localized irritations. The fundamental abnormity is the presence of abnormal papillæ, and interpapillary processes or "filament founts" situated within the epidermis, from which the abnormally elongated, stratified, and keratosed filaments trace their direct origin. Some of the basal cells at the papillary rete border showed vacuolated and œdematous change, to which, however, no special significance could be attributed. The filaments were freely studded with microorganisms which resembled *Staphylococcus albus* morphologically, to which likewise no special significance could be attached. A few double contoured bodies were occasionally observed among the filaments and in the deeper structures, to which no important significance was attributed.

7. **Tuberculosis of the Ankle Joint and Tarsus.**—Sever remarks that tuberculosis of the ankle joint and bones of the foot in children is insidious in its onset, chronic in its course, and attacks usually young children. The expectant or conservative method of treatment is preferable to the operative one. Time is saved and deformity less under the conservative plan than by the operative method. There is also less danger of secondary joint involvement and general tuberculosis by pursuing the nonoperative plan. The disease may be associated with bone and joint tuberculosis in other parts of the body. The prognosis is fairly good for life, but poor for a good ankle joint in which there is no disability. A certain number get a good functional ankle, with but slight deformity. In regard to the smaller metatarsai bones the results are good for joint motion.

8. **Diabetes Mellitus.**—MacLeod urges that in the utilization of carbohydrates in the animal body the glycogenic function of the liver is at least as important as the glycolytic action in the tissues, and since there is plenty of evidence that this glycogenic function is easily deranged so as to cause diabetes, it should be more carefully investigated as to its participation in the cause of those forms of diabetes which at first sight may seem to be quite independent of it.

MEDICAL RECORD.

December 17, 1910.

1. Concerning the Ehrlich-Hata Preparation, No. 606,
By M. S. Kakels.
2. Intussusception of the Appendix,
By Alexis V. Moschcowitz.
3. Typhoid Spine: Report of a Case, with Radiograms; Completed Bibliography,
By Nathaniel Bowditch Potter.
4. A Case of Stab Wound of the Heart,
By John F. Erdmann.
5. Spontaneous Rupture of a Glaucomatous Eyeball,
By Burton Chance.

6. A Brief Comparative Study of Heart Stimulants Used during Fevers with a Recommendation of the Præcordial Compress, By WILLIAM LEE SECOR.
7. Chancroids Due to a Peculiar Cause, By WILLIAM J. ROBINSON.

1. **Dioxydiamidoarsenobenzol.**—Kakels reports thirteen cases of syphilis treated with "606." He remarks that his experience with the injections has been that of the three—Wechselmann's neutral suspension subcutaneously injected, Alt's alkaline also subcutaneously, and Meltzer's with Alt's alkaline solution intramuscular (ileocostal) injection—the latter seems to give the least pain of all. As regards comparing the rapidity with which absorption takes place, as would be evidenced by the quicker disappearance of lesions and the effects on the Wassermann reaction, sufficient time has not elapsed in these last three cases for him to express an opinion.

2. **Intussusception of the Appendix.**—Moschgowitz remarks that with us the operative treatment of intussusception of the appendix is deservedly recognized as that of choice, and he believes the presence of irreducible appendicular intussusceptions, be they ever so rare, adds strong additional arguments for the correctness of this view. If open operation is done for an intussusception, we can readily see whether the entire intussusception has been reduced, and if not, we can take steps to overcome it or act upon indications. In the simplest cases of partial intussusception an attempt, frequently successful, is to be made to desinvaginate the entire appendix and then to remove it. If this is impossible its excision with the adjoining part of the cæcum is indicated. In total intussusceptions of the appendix he doubts whether desinvagination is ever possible. Three methods would appear to be feasible. 1. To incise the cæcum and to desinvaginate the appendix from within and then extirpate it; 2, to incise the cæcum and to extirpate the appendix from within; and, 3, to resect the cæcum with the appendix in one mass; this should, however, not become necessary except in the rarest instances.

4. **Stab Wound of the Heart.**—Erdmann reports a case of stab wound of the heart, made by a knife, three quarters of an inch wide by six inches long, that would correspond to a fruit knife or one used for paring potatoes. The puncture—three quarters of an inch long—was on the right side of the chest, one and three quarter inches to the right of the median line, penetrating the fifth costal cartilage obliquely, and splitting its lower three quarters. The distance from the left nipple was six inches to the right of the median line and on a line one and a quarter inches below the right nipple. The patient was received at the hospital shortly after the injury, and Erdmann saw the patient at three and a half hours after the injury. In the interval the patient had had a transfusion of 500 c.c. of salt solution. His condition at the time Erdmann saw him was one of profound shock, marked pallor, the pulse uncountable and almost imperceptible, dyspnœa, rapid and shallow breathing, cold perspiration, and semiconsciousness. The heart sounds were distant and almost imperceptible. The patient complained of constant abdominal pain and upon palpation he was found to be exquisitely tender on the right half of the abdomen. On percussion dulness and flatness extended over this entire region, particularly marked in the upper half. As a result of the pain, dulness and flatness, and the marked tympanitis on the other side, it was suspected that the liver might have been punctured or transfixed to such a degree that a hæmorrhage had taken place into the peritoneal cavity, in addition to an injury in all probability to the outer edge of the pericardial sac. An exploration was begun at the angle between the seventh costal cartilage and the ensiform process. Upon reaching the peritonæum, a deep blue black appearance such as is seen in rupture of extrauterine gestation sac was observed. The exploration was then extended two inches further in the abdominal wall, and the peritonæum opened, when the dark blue mass was seen to be the liver, driven downward four inches below the costal margin. It was deeply cyanotic. The peritoneal cavity and the dome of the liver were explored and nothing found to indicate puncture. The seventh costal cartilage was then raised, the diaphragmatic musculature was detached, and the cartilage cut at its juncture with the rib. The sixth, the fifth, and the fourth were also cut through. A retractor was placed on the cartilages, the skin raised from the sternum at the upper limit of the incision, and the sternum cut through at the upper limit of the incision with a pair of bone cutting forceps. The cartilage and bony flap were raised to the left by forcibly dragging upon the retractor previously placed upon the cartilages. Upon raising the flap a hole admitting the index finger was found penetrating the pericardium. This was enlarged by a transverse incision one half inch long toward the median portion of the mediastinum. The index finger was inserted and explored the contour of the heart, when a hole was found in the right ventricle admitting the gloved index finger. The pericardium was then incised upward and downward in the median portion of the mediastinum, so that an exposure was made for four inches in length. Upon making this opening in the pericardium an immense amount of clot was expelled, with some liquid blood. At this point the heart slipped from his fingers. The finger was again rapidly introduced, and the palm of the hand above and the thumb below grasped the heart, while the index finger was retained within the ventricle. A curved needle, threaded with No. 2 plain catgut, was then placed down to the heart, and during a systole puncture was made, irrespective of penetrating the cavity or not. As soon as the needle had pierced one side of the incision, the finger was withdrawn and the needle made to make its exit from the opposite side. A knot was tied and the heart held dangling from this suture. The subsequent stitches—eight or ten in number—were readily placed, one more being placed in the line of the heart wound proper, and two more rows placed after the manner of Lambert. A long cigarette drain was placed in the pericardial cavity, the incision in the pericardium closed up to the emergence of the drain, which was led out at the angle of the seventh costal cartilage and the sternum. Catgut stitches were taken in the costal cartilages between them and the ribs. Nothing was done to-

the sternum except to hold it in place by the dressings after the skin wound was sutured. The patient was back in bed in about thirty minutes. The subsequent condition, while followed by a period of anxiety for four or five days on account of a lobar pneumonia and a pneumothorax, was such as to cause Erdmann to feel that a recovery was in order. The patient was out of bed on the fourteenth day, and was discharged on September 30, having been kept in the hospital simply to prevent his undergoing any undue exercise or labor.

7. **Chancroids Due to a Peculiar Cause.**—Robinson reports a case of ulcerations of the penis of a husband due to antiseptic tablets containing corrosive sublimate and citric acid, inserted before connection into the vagina of the wife to prevent conception.

BRITISH MEDICAL JOURNAL.

December 10, 1910.

1. Surgical versus the Expectant Treatment of Intracranial Tumor, By Sir VICTOR HORSLEY.
2. Cancer, By Sir ALFRED PEARCE GOULD.
3. The Results of Bronchial Obstruction, By G. NEWTON PITT.

2. **Cancer.**—Sir Alfred Gould answers the question, What is cancer? in the following way: "Think of the fertilized human ovum as a single nucleated cell. Picture it dividing into two, four, eight, sixteen, and thirty-two cells, all similar in size, form, and structure. Trace on these cells as they multiply by division, and see them silently range themselves in the three primary embryonic layers—epiblast, mesoblast, and hypoblast—and by that step effect a separation of cells which to our senses appear identical, but whose destiny marks them out as absolutely distinct. Follow on the wonderful drama of development, try to realize the orderliness of it all, the varying distinction of epithelia, endothelia, and connective tissues. Observe the intimate association of these embryonic layers in the evolution of parts and organs, their perfect cooperation, their mutual dependence. See the rising up here of mesoblast into papillæ, ever clothed with epiblast, and there the downgrowth of epiblast or hypoblast into glands ever supported and nourished by mesoblast. Know that all this goes on with unerring precision, but with almost endless variation in proportion, with countless differences in form and function of cell, with an ordered cycle of chemical changes so wide in its range, so varied in its detail, that we seem to be only at the threshold of a knowledge of it. Remember that this development proceeds with measured step to a certain definite extent only, that then in spite of all kinds of variation in supply and demand, and of adverse and favorable conditions, a certain level of cell life and growth is maintained for a more or less determined period, and that then first here, then there, the processes seem to abate and fail, the flame of life seems to flicker until the unknown and wonderful changes of age draw on. Now summarize our facts about cancer. Consider the disproportionate multiplication of certain cells, their imperfect, irregular, and useless distinction, their failure to form Altmann's granules, their excessive affinity for and need for potassium, their insistent intrusion into surrounding tissues, their imperfect cooperation with the other cells, and, finally, their selfish greed which enables them to live when other cells are failing and perishing for lack of nourishment—what is it all but a failure of, or a revolt against, that great cytological law or impulse which first manifests itself in the primary division of the ovum, and lasts on till the death of the organism? Cancer is not a disease attacking the body from without, it is the result of a breach or failure of fundamental cell law—a law of which we know only the results; a law so majestic that obedience to it results in perfect dvelopment, perfect health, the full measure of days, and disobedience to it may slowly spell out all the inscrutable woes of cancer." The author then treats certain conditions which, he says, are known to exert an influence on the causation of cancer: Age, sex, chronic irritation, x rays, and alcohol. Of immunity he remarks that cancer immunity might be evidenced in one or more of the following ways: 1. The power of living cells to conform to the law of normal development and to avoid that increased multiplication, defective distinction, and tendency to intrude themselves into, and grow in, neighboring cell territories, which together connote cancer. 2. Opposition to the intrusion of cancer cells into, and their development in, heterologous tissue. 3. Inhibition of the growth of cancer or destruction of living cancer cells.

LANCET.

December 10, 1910.

1. Cancer, By Sir ALFRED PEARCE GOULD.
2. Results of Bronchial Obstruction, By G. NEWTON PITT.
3. The Theory and Practice of the Treatment of Syphilis with Ehrlich's New Specific "606," By JAMES MCINTOSH.
4. A Pedigree Showing Biparental Inheritance of Webbed Toes, By H. P. NEWSHOLME.
5. Note on an Obscure Case of Peritonitis, By R. H. NORMAN.
6. Uterine Cervical Polypus Undergoing Malignant Degeneration, By H. MACNAUGHTON JONES.

2. **Results of Bronchial Obstruction.**—Pitt remarks that although many cases of foreign bodies in the bronchi have been recorded, in but very few has an accurate note been made of the physical signs in the lung in an early stage of the illness. The body generally passes into the right bronchus because it is more vertical and is also slightly larger. The changes are unilateral, serious, and progressive. The following are the most important evidences suggestive of a foreign body in a bronchus, and in any such case a bronchoscope should be passed in order that the condition of the tubes may be determined, and a positive opinion formed. 1. A most important factor in diagnosis, and one which until we had x rays was absolutely essential, is the history of swallowing something immediately before the onset of an acute attack of severe dyspnœa and cough. 2. Not infrequently a whistling or wheezing sound which the patient can localize to one side, varying in quality if the object is not fixed in the bronchus. 3. Great distress, with not infrequently a constricting pain behind the sternum, made worse by movement. 4. Dyspnœa, with varying exacerbations, often intense and made worse by cough, but it may be elicited only by exertion. After a time there may be no distress. 5. Absent or, rarely, very noisy breath sounds with some slight diminution of voice

and tactile vocal fremitus limited to one side of the chest. 6. At first resonance on the affected side, soon consolidation with dulness, and, after a time, the signs of cavities and the simulation of phthisis; occasionally superresonance. The physical signs sometimes vary from time to time. 7. With x rays, the defective movement of the diaphragm and of the thorax, the alteration in the density of the lung, and not infrequently the outline of the foreign body itself, may be clearly made out. 8. Delay in the commencement of inspiration as compared with that on the other side. 9. Defective movement with consequent diminution in the size of the affected side. 10. Violent paroxysmal persistent cough which is apparently most marked when the object is at the bifurcation, as the sensibility of the mucous membrane is greatest here, as can be noticed when passing a bronchoscope. 11. Early pyrexia, which later becomes hectic, associated with chills. 12. After a short time an expectoration more or less profuse, purulent, often bloody, and later often fœtid. 13. In some there are nausea and vomiting which may be very troublesome. 14. Pneumonia often develops in forty-eight hours; this may be septic and may be followed by gangrene.

3. "606."—McIntosh states that the importance of "606" as a destroyer of spirochætæ cannot be overestimated, even apart from the beneficial effect upon the patient. In those cases in which spirochætæ were demonstrable in very large numbers before inoculation, none were found in less than twenty-four hours, even after prolonged search. This fact has already been fully established. The importance of the observation lies in the probability that cases of syphilis can be rendered practically noninfective in a day or two. If this is true, Ehrlich will have swept away the scourge of 2,000 years and given into the hands of any state, which will avail itself of it, a weapon for the forcible suppression of syphilis.

MEDIZINISCHE KLINIK.

November 27, 1910.

1. Diet in Health Resorts and Institutions. II, Diet and Mineral Waters Diet Cures, By Alois Strasser.
2. Pellagra, By Augusto Tamburini.
3. The Use of Urotropin in the Treatment of Serous and Purulent Meningitis, Especially in Childhood, By J. Ibrahim.
4. Plastics at and after Operations on the Ear, By Preysing.
5. The Technique of the Intravenous Injection of 606, By Hans Assmy.
6. Therapy of the Primary Lesion of Syphilis, By G. J. Mueller.
7. Tropical Climate and the Period of Ice in the Past History of the Earth, By F. Frech.

3. **Urotropin in Meningitis.**—Ibrahim says that after the internal administration of urotropin it can always be demonstrated in the cerebrospinal fluid of infants; that urotropin dissolved in the cerebrospinal fluid placed in the incubator at a temperature of 37° or 38° C. gives off formaldehyde; that urotropin displays germ inhibitive powers also in the cerebrospinal fluid at the body temperature; that to a less degree such powers are demonstrable in the cerebrospinal fluid after therapeutical doses; and that in view of these facts it seems to be justified to try urotropin therapeutically in all forms of serous and purulent meningitis.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT.

November 29, 1910.

1. The Influence of Infusion of Salt Solution, By Henkel.
2. Chronic Ulcer of the Stomach and Its Demonstration by the X Rays, By Rieder.
3. The Clinical Behavior of the Liver in Scarlet Fever, By Hildebrandt.
4. The Transition of Anaphylaxis from Father and Mother to the Child, By Schenck.
5. The Value of Relative Leucocyte Counts, By Hecker.
6. My Experiences thus far with "606," By Werther.
7. The Intravenous Infusion of Arsenobenzol, Its Technique and Value, By Hausmann.
8. My Experiences with "606," By Chrzelitzer.
9. "606" and Lepra, By Gioseffi.
10. The Orthopædic Treatment of Tuberculosis of the Ankle Joint, By Schanz.
11. Casuistics of Traumatic Cysts of the Pancreas, By Graf.
12. A Case of Myxœdema during Pregnancy, By Stoessner.
13. Technique of Drawing Blood for Examination, By Ploeger.
14. Contribution to the Treatment of the Ataxias, By Uebeleisen.
15. Technique of the Fenestrated Plaster of Paris Bandage, By Hirt.
16. An Equipment for the Subcutaneous and Intramuscular Injection of Ehrlich-Hata's "606," By Krebs.
17. Remarks Concerning the Adreninæmia of the Blood during the Period of Gestation, By Neu.

2. **Demonstration of Gastric Ulcer by the X Rays.**—Rieder says that a fresh ulcer of the stomach cannot be demonstrated by the x rays, at least usually. If it is deep, callous, or perforated the diagnosis may be possible, at least indirectly, through the pathological processes taking place about the stomach. The röntgenological demonstration of secondary changes in the form and size of the body and openings of the stomach caused by processes of contraction and perigastritis is of great value, for it permits conclusions to be drawn regarding past, and perhaps still existing, ulcers and gives important indications as to treatment. Finally the x ray examination is of good service in the distinctive diagnosis between ulcer and primary carcinoma, especially when the other clinical methods of examination are freely used with it.

3. **The Liver in Scarlet Fever.**—Hildebrandt says that in the great majority of cases of scarlet fever the excretion of urobilin is pathologically increased. The urobilinuria follows quite accurately the curve of the temperature, so that in general the urobilinuria and the fever disappear simultaneously. The intensity of the urobilinuria likewise presents a certain, though not exclusive, dependence on the height of the fever. During convalescence the excretion of urobilin is commonly no longer increased. This presence of urobilinuria is the simplest and surest indication of the presence of a parenchymatous hepatitis, which occurs without icterus or bilirubinuria, and he urges that it is quite possible for the hepatitis of scarlet fever to hold the same noxious importance in the pathogenesis of cirrhosis of the liver that the nephritis of scarlet fever holds in the development of a chronic nephritis.

6 and 8. "606."—Werther, after reviewing his experiences thus far with the use of "606," gives the following imperative indications: 1. "606" is absolutely indicated in cases that are resistant to mercury. He has had several cases in which syphilitic fever which remained constant after several in-

jections of mercury fell in a short time and permanently after the use of "606." 2. When cases that exhibit an idiosyncrasy against mercury are to be treated with "606" it should be noted whether such patients as are induced to excrete albumin by mercury do not present the same symptom after "606." 3. All malignant, ulcerative cases, whether they have been treated in vain with mercury or not, should be treated with "606," because its rapid action saves from further destruction. 4. Cases in which there is danger to life, stenosis of the larynx, paralysis of the cerebral nerves, should be treated with "606," and care must be exercised concerning a local reaction. Special care is necessary when the vital centres are endangered. To these absolute indications may be added all fresh cases in which there is a hope of an abortive treatment. The double injection of the largest possible dose suited to the constitution of the patient is recommended, and the earlier it is given the better.—Chrzelitzer has treated forty-seven cases and thinks that "606" should be used instead of mercury or combined with it.

9. **"606" and Lepra.**—Gioseffi says that no benefit has been obtained from "606" in cases of lepra that were not syphilitic and in patients in whom the Wassermann test was negative. No granular degeneration in the bacilli (leprolysis) was produced.

17. **Adreninæmia during Gestation.**—Neu finds that there are fixed fluctuations of the adrenin in the blood that correspond to the conditions of pregnancy, labor, and the puerperal period. The content of adrenin is particularly high in the serum of the retroplacentar hæmatoma and of the blood from the umbilical cord. The highest value of adrenin is met with in the serum of a pregnant woman with glycosuria and well developed chloasma uterinum.

WIENER KLINISCHE WOCHENSCHRIFT.

November 24, 1910.

1. Treatment of Syphilis with Ehrlich's Arsenobenzol, By FINGER.
2. Contributions to the Operative Treatment of Acute and Chronic Pancreatitis, By JOSEPH GOBIET.
3. A Case of Simultaneous Inflammation of the Cæcum and of Meckel's Diverticulum, By LEOPOLD VON MAYERSBACH.
4. Studies Concerning Intestinal Putrefaction. VII, Isolation of the Butyric Acid Formations from the Fæces, By A. RODELLA.
5. The One Hundredth Birthday of Nikolai Iwanowitsch Pirogoff, By FRÄNKEL.
6. Developmental Disturbances of the Male Germinal Glands in Youth, By ALFRED ADLER.
7. Reply to Dr. Adler, By J. KYRLE.

1. **Treatment of Syphilis with "606."**—Finger has thus far tried "606" in 170 cases. All of the patients were kept in the hospital as long as possible after treatment and were followed up after their discharge so carefully that all but thirty-eight have remained constantly under observation. Primary affections usually clean up quickly, epidermize, soften, and heal up in from two to three weeks, but this rule is not without exception. Not rarely the chancres heal quickly, but the scar remains fairly hard for two or three months, as is the case after local and general mercurial treatment. In one case, treated with 0.5 gramme in paraffin emulsion, a very hard chancre complicated with phimosis and dorsal lymphangitis retrograded quickly at first so that the phimosis disappeared, but soon the infiltration and hardness of the chancre returned and the phimosis recurred so that at the end of about three weeks the status quo ante had been reestablished. A similar course was run by another case in which 0.4 gramme was injected in an alkaline solution. A marked local symptom that varies in intensity but appears in many cases is an inflammatory reaction of the infiltrate, which may be compared with the Jarisch-Herxheimer reaction of the syphilitic exanthem, and with the tuberculin reaction. The chancre is succulent while its neighborhood is somewhat œdematous and inflamed; these symptoms, which appear from a few hours to a day after the injection, die away in a short time. The lymphatic glands are affected decidedly less than the primary lesion. Those lying closest to the lesion remain unchanged for weeks and diminish in size only slowly, inconsiderably so that in many cases a real diminution can not be recognized until after two or three months. Swellings of the distant cubital, axillary, and cervical glands may appear anew weeks after the injection. As regards the secondary symptoms the influence of arsenobenzol is usually extraordinarily prompt and distinct. The rapidity with which they retrogress depends naturally on their form and intensity. In general it may be said that the succulent lesions of the mucous membranes react the most promptly, dry up, and epidermize. Yet in one case, treated with 0.4 gramme, remains of tonsillar papules could be recognized for two months after the injection. Roseola heals more slowly, three, four, ten days, three weeks, a month. Papulous exanthenata require a longer time, and the most obstinate of all is the psoriasis palmæ et plantæ, which sometimes requires four weeks or more for its involution. The following refractory case is described. A patient who had contracted syphilis six months before and had been treated with mercury had a recurrence of diptheroid papules on the palate. Injection of 0.5 gramme of arsenobenzol produced no effect within fourteen days. Inunctions then produced a fairly rapid improvement. Herxheimer's reaction is very frequently met with in the secondary forms. A few hours after the injection the efflorescenes become more intense, reach their maximum in about twenty-four hours, and then disappear in from one to two days. In five cases, four male, one female, he noticed another symptom: the appearance of an exanthem on the day after the injection that was not there on the day before. These patients were all in the seventh or eighth week after infection. The curative action of arsenobenzol upon tertiary lesions is very marked. The rapidity depends naturally on the extent of the process, so the time required varies from a few days to two, three, and five weeks. He has received the impression that the healing process set up by the injection is at first intensive, but that it becomes weaker with the lapse of time so that the final skinning over and absorption of the residue of the infiltrate proceeds slowly, even when large doses of from 0.5 to 0.7 gramme have been administered. The effect in diseases of the bones is less brilliant. In this class of cases he describes several that were refactory. In

fourteen cases of hereditary syphilis the results in general were good, but no results were obtained in a case of deafmutism, three of parenchymatous keratitis, and one of chorioiditis and vitreous opacities, in all of which Wassermann's reaction was positive. From his observations Finger is inclined to think that arsenobenzol exerts a preeminently symptomatic action, but does not reach out to a definitive cure of the pathological process, and that therefore treatment with it cannot be looked upon as a radical method of cure of syphilis. He finds the behavior of Wassermann's reaction with injection of 606 quite analogous to that with energetic mercurial treatment. With regard to the harmlessness of the remedy he reports seven cases in which troubles developed later which, though they could not be ascribed with positiveness to the remedy, yet could be referred to it with a certain degree of probability. In four of these cases serious ocular diseases appeared two or three months after the injection; in two of them Wassermann's reaction was negative. The three remaining cases were of labyrinthine trouble; the first was affected temporarily on the day following the injection, the others were affected two and three months after the injection and the condition has remained stationary. In both of the latter cases Wassermann's reaction was negative, and the patients showed no signs of syphilis.

PRACTITIONER.

December, 1910.

1. The Vaccine Treatment of Bronchitis, By Arthur Latham.
2. The Present Position of the Vaccine Treatment of Pulmonary Tuberculosis, By H. Batty Shaw.
3. Vaccine Therapy, By E. von Ofenheim.
4. The Teaching of Insanity to the Medical Student and Practitioner in Relation to the Prevention of Mental Diseases, By Robert Jones.
5. The Diagnosis and Home Treatment of Scarlet Fever, By F. G. Crookshank.
6. Gallstones: Their Surgical Treatment, By James Kirkland.
7. Ehrlich-Hata "606." Some Remarks on more than 150 Cases seen in Berlin, Copenhagen, and Hamburg, By L. F. Knuthsen.
8. The Efficacy of Bloodletting: A Plea for its Extended Use, By John Wallace Milne.
9. Erythromelalgia, By E. A. Chill.
10. Blood Contamination in Organismal Diseases, By S. J. Ross.
11. A Case of Acute Pyelonephritis of Unusual Severity due to the Colon Bacillus, but with Alkaline Urine, By Sydney Kent.

1. **Vaccine Treatment of Bronchitis.**—Latham states that the ordinary methods of treatment hitherto employed in bronchitis have not been wholly satisfactory, although much has been done in acute and a little in more chronic or recurring cases to lessen the severity of the symptoms by appropriate remedies and climatic treatment. Of late years it has become clear that bronchitis is always due to some bacterial infection, and this has caused a profound modification in our view of this disease. There is no specific microorganism associated with bronchitis. On the contrary, nearly every pathogenic organism appears to be capable of setting up inflammatory changes in the bronchi. Those more commonly met with are the *Micrococcus catarrhalis*, the pneumococcus, the streptococcus, Pfeiffer's bacillus, and the Friedländer bacillus—either alone or associated with one or more of the others. Staphylococci are also often found, but it is doubtful how far they are in any way responsible for the inflammatory conditions. Much less commonly bronchitis may be due to the *Bacterium coli*, the *Bacillus septus*, etc. Again, Klebs-Löffler bacillus and the *Bacillus typhosus* are found to be the cause of bronchitis in some cases of diphtheria and enteric fever. Does this knowledge help us in our attempts to understand the pathology of bronchitis? Suppose, for example, that a man's resistance to microbic infection is lowered by some means and the *Micrococcus catarrhalis* or Pfeiffer's bacillus is enabled to establish a foothold in his bronchial tubes and to set up inflammatory changes, what happens? The author thus describes the method adopted by Nature to overcome the microorganism: There is a fight between the microorganism and the defensive forces of the body, both local and general. After a varying time, possibly cut short by appropriate medical treatment, the defensive forces usually win. In some cases, unfortunately few in number, the victory is so complete that the invading microorganisms are to all practical purposes exterminated, but in the great majority of cases, however, the victory of the body is incomplete, the invaders are merely weakened and kept in check. After a time something happens—in popular phrase it is usually called a chill—which lowers the resistance of the body and renders the defensive forces less effective, when the microorganisms are once more enabled to multiply and attack. The result we call a relapse or a new attack of bronchitis. We must, therefore, find a treatment which will make the victory of the body forces complete. And this, the author thinks, can be done by vaccine therapy. In this treatment the first thing to decide is what microorganisms are responsible for the condition. The patient should be directed to cleanse his mouth thoroughly with warm sterilized water—in order to exclude as many mouth organisms as possible—and then to spit into a sterilized bottle which is to be sent to a bacteriologist. The expectoration is now examined and cultures are made. If it is found that only one organism is present a trial of a corresponding vaccine (prepared from the patient's own strain) may be made. If, however, a number of different organisms are found, it is more difficult to know which of them may be the causal factor of the disease. Another method is to make a polyvalent vaccine of all the organisms found. This cannot be recommended as a scientific method. In some instances we are therefore compelled to try successively the effect of vaccines of the different microorganisms until by the process of exclusion we find which is the effective one. In many cases we may get some guide as to which vaccine to use by a consideration of the particular case in all its bearings. The dose and the spacing of the doses must be decided by a consideration of the clinical symptoms and temperature.

3. **Vaccine Therapy.**—Von Ofenheim states that vaccine therapy has become part of the science of therapy—a distinct part like pharmacological therapy, surgical therapy, light therapy, electrotherapy, etc. It has to be carried out, or at least

supervised, by a man who has made a special study of the subject, and who has at his command a wide experience in this particular branch, together with a perfect technique. The representatives of this part of therapy—appropriately called "clinical bacteriologists"—are clinicians, and it will be their duty, apart from their laboratory work, to keep their eyes open to all clinical symptoms, and to watch the patient as well as the microbes. They will have to work hand in hand with physicians and surgeons. It is just as much a mistake to exclude bacteriological treatment in the case of an infection as it would be to expect miracles from vaccine therapy, and to depend upon it alone and entirely. Even in one and the same disease, under different conditions, the case will have to be dealt with by different kinds of therapy and only by looking at it from all sides, with an open and unbiased mind, we shall be able to do the best for the patient and for the suffering part of mankind altogether, and this is the object of therapy, it being unimportant by which means it is obtained. To try to find the right way to this end is the duty of the medical man, whatever the special branch of his work may be.

7. **"606."**—Knuthsen says that dioxydiamidoarsenobenzol has come to stay. He gives a description of the drug, its use, effect, and results; and speaks of his observations made in Berlin, Hamburg, and especially in Copenhagen.

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Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of October 19, 1910.

The President, Dr. REYNOLD WEBB WILCOX, in the Chair.

Nasal Diphtheria in Infants.—In this paper Dr. GEORGE D. SCOTT said that his own observations had confirmed those of Neumann, Schiller, and Stenger as to the frequency of this condition, though it was often passed off as a common cold. The cause was the Klebs-Loeffler bacillus, while the predisposing factors were rhachitis and malnutrition. Crowded tenements, illy ventilated rooms, adenoids, congestion of the epipharynx from whatever cause, and deflected nasal septa aided materially in producing a fertile soil for the implantation of the specific bacillus. The absolute diagnosis was possible only by a microscopical examination. Nasal diphtheria, in the speaker's experience, was never absolutely of a pure character, even the simplest forms showing a greater or smaller number of other bacteria. The condition was both primary and secondary, and ran through three stages—a catarrhal rhinitis, a fibrinous rhinitis, and a diphtheritic catarrhal rhinitis. These were described. The first, in which the Klebs-Loeffler predominated among the bacilli present, was often overlooked and not treated, passing away in a few days and leaving the mucous membrane as sound as before infection. In the second stage the pseudomembranous exudation disappeared in from eight to ten days if untreated (earlier under treatment), leaving a moderate diphtheritic catarrh, or the third stage of the disease. The latter might last for weeks, and Frankel's bacillus, the pneumococcus, the pseudodiphtheritic, and the staphylococcus or streptococcus might implant themselves upon this fertile soil. The persistency of this stage was undoubtedly due to the implantation of the specific bacillus in the accessory sinuses. The infection might extend also through the lacrimal duct, closing it and causing the overflow of tears down the face. In infants the cervical adenitis incident to the disease rarely terminated in sloughing or abscess.

The subdivision into three stages, which Dr. Scott believed to be the best classification, was not accepted by some authors, such as Frankel, Hoffman, and Beck, who believed the second stage, fibrinous rhinitis, to be an independent disease, since few Klebs-Loeffler bacilli were apparently present, and these were due to their implantation on the surrounding membranes. Baginsky, however, regarded fibrinous rhinitis as diphtheritic unless bacterial examination showed this not to be the case. The nasal type of diphtheria might be remarkably contagious. Often the most virulent forms of bacteria were found where only moderate lesions were present. The contagiousness, the easy transmission of the secretion from the nasal passages of the patient to the susceptible mucous membranes of others, as in caressing, kissing, etc., the long life of the bacillus, and its capability of causing an epidemic long after the acute symptoms in the subject had subsided rendered the danger a very real one. The prophylaxis of the patient and his surroundings, therefore, was almost as essential as the treatment, and conscientiously carried out it meant no further contagion. An immunizing dose of antitoxine should be given to each member of the family, and they should be instructed not to mingle with others. Having described the other precautionary measures required, he said that swab cultures from the nose ought to be taken every three days until no more bacilli could be found.

The general treatment of the infant was simple. A nursling should have its regular feedings from the mother, the latter protecting the nipple by cleansing it immediately after nursing. She, moreover, should receive a larger immunizing dose of antitoxine than others of the family. If the ordinary modification of milk was not taken well by the bottle fed child, it was best to weaken the proteids. During the intervals between feedings Dr. Scott gave from 1 to 3 drachms of fruit soups or raw pineapple or orange juice, warm and slightly sweetened. Nasal douches should not be used, as these served to push the infected membrane farther into the nasopharynx, causing further infection of the surrounding sinuses. Pledgets of cotton moistened with warm raw pineapple juice, inserted alternately into both nares, softened and probably digested the crusts, and could be followed by pledgets containing phenol (2 per cent.) or warm sweet oil, hydrogen peroxide, one fourth strength, or argyrol, 5 per cent. Castor oil, in small but frequent doses, might be given to relieve constipation. Broths, bouillons, peptonized milk, and wine whey were at times needful. For the prostration, strychnine, from 1/200 to 1/150 of a grain, was efficient. Caffeine, from 1/20 to ¼ of a grain, and camphor, in the form of spiritus camphoræ, from 5 to

10 minims, were also useful. Enough antitoxine should be given the patient to neutralize the poison and lessen its invasion, the amount required depending on the age of the child, the severity of the intoxication, and the extent of the nasal membrane. Therefore it was well never to wait for a bacterial examination in a suspected case, but to give the serum immediately. In the initial stage of the disease but little was required if given thus promptly. As much as 1,500 units injected deeply into the buttock once, and followed by 2,000 units by the mouth, given midway between findings once or twice (after an interval of six hours), usually sufficed. In the second stage he followed up the initial injection by a second and perhaps a third, at five hour intervals. As the membrane disappeared, 2,000 units were again given by the mouth once, twice, or three times, as might be required. A study of the condition of the membrane and of the intoxication present at each visit was of paramount importance. In Dr. Scott's hands this mouth method of administering antitoxine had worked well for years.

Psychotherapy; its Uses and Abuses.—For this paper, by Dr. Edward D. Fisher, see page 1266.

Dr. Smith Ely Jelliffe said that if he were to ask several men in town how they treated anæmia or diphtheria or tuberculosis or syphilis, and the answers received should be "by pharmacotherapy," further questions would be necessary in order to find out the definite kind of pharmacotherapy employed in each particular instance. The same thing was true of psychotherapy, which was just as diverse as pharmacotherapy in its aims and its methods, although, naturally, the variety here was not so great. In psychotherapy, to prescribe the same kind of measures in every case would be just as sensible as to treat all kinds of disease with one prescription. Psychotherapy, in plain English, was simply a group term for a large variety of mental modes of treatment. These measures had been practised in one way or another from the remotest ages; in fact, they were among the very oldest forms of medical treatment. But because they were so ancient, it did not follow that distinct advances had not been made in our knowledge of the methods and their various applications. Such drugs as opium and belladonna had been employed for a very long time, but no one would pretend to say that we did not know more about them than our forefathers. Even animals in the prehistoric days chewed medicinal herbs, but to deduce, as some detractors of psychotherapy did, from the antiquity of a measure its necessary uselessness seemed to the speaker to be futile, and, furthermore, it was a sad sight to see many moderns utilize old remedies much as our presimian ancestors employed them, and with hardly more than pure empiricism.

Very little had been said in reference to the subdivision of psychotherapeutics. To state that this kind of treatment was an exclusive school or method which could be practised without an adequate knowledge of modern medicine in general was absurd. Psychotherapy was an extremely complex matter. To be able to get a knowledge of mental facts and the effects of mental facts required an amount of acumen which was scarcely called for in any other department of medicine. The absurdity of many modern pretenders, various sects of mental healers, etc., was strikingly revealed in their attitude toward functional disease. The general argument used was, "We do not pretend to treat organic diseases. We recognize that we cannot understand them, and hence we prefer the physician to treat them; but let us treat the functional diseases." Now, the only difference between organic and functional disease, in this connection, was that the causes and the mode of development in the former, organic disease, notwithstanding the many difficulties, were known and could be worked with, whereas the term functional was a confession of ignorance on the part of those most informed about these very facts. Thus the reasoning reduced itself to absurdity. The mental healers, with no knowledge whatever, said they did not pretend to understand those diseases which medical science really knew much about, but, in their simplicity and guilelessness, they pretended they were able to do the much more difficult thing of treating those diseases the key for the understanding of which medical science, notwithstanding years of patient research, had not yet been able to find.

Glancing at the gross classification of psychotherapeutic measures, and leaving out minor distinctions, we found four prominent methods of treatment—hypnotism, suggestion, reeducation, and psychoanalysis. Hypnotism, it might be stated, applied to primitive minds alone, the type of mind which received everything unconditionally. The operator simply piled more facts on the mind of the hypnotized patient. As to suggestion, it was not, as many thought, as simple as sprinkling salt on our morning eggs. In order to get a mental fact in, one often had to be very careful, and it was necessary to employ what might be called subterranean methods. The Dubois method Dr. Jelliffe believed to be fundamentally sound. It was a kind of reeducation, and the way of accomplishing this was different in different classes of patients. Psychoanalysis had a limited yet very important application, as it could usually be employed with success only in the case of individuals of a particular kind of mentality. These were persons who long ago had developed what might be called a psychic boil. There were some people, psychoneurotics, who carried about with them, buried down deep, sore spots in the soul which had never been adjusted properly and which later were the cause for many of their symptoms. These buried and incompletely adjusted complexes were the "jack in the box" for many neurotics, and the lid would spring open according to the tension put upon the contents or according to the weakened resistance on the lid. These complexes were not clearly recognized by the individual in question, and hence they had to be dug out by the various methods of psychoanalysis. The three chief modes of approach to these hidden sources of disturbance were free association, as originally outlined by Freud, and now expanded, the system of word association elaborated by the Zürich school, and the analysis of dreams, as suggested by Freud. In actual practice we used all three methods and others in addition. The disinterment of the complex, turning it over to the light of free consciousness, caused its catharsis and cured the patient.

Dr. Graeme M. Hammond said that the question which arose in the minds of most physicians was, What had psychotherapy done for medicine? Had it added anything to our general ability to shorten the time in treating disease? This form of treatment was nothing new. Many years ago Charcot employed the plan of pressing disks of gold on the nape of the neck, and afterward substituted rubber for these. It was simply the influence of suggestion that he made use of. There was a good deal in psychotherapy, and one of the first organizations to avail itself of its utility was the so called Christian Science Church. This had been established on the ignorance of doctors. Suggestion was all powerful in the case of neurasthenic females, and it remained for a woman to seize hold of this fact. There would be no objection to Eddyism if it were called by its proper name, suggestion. The success of this cult showed that in suggestion we had at our disposal a means which was very effective in appropriate cases. We know more about psychotherapy now than formerly. As to Freud's method, it was a fact that everyone liked to talk about his own case, and the mind was relieved by such discussion of its troubles. The idea of a trauma was ridiculous and absurd. These mental disorders were not due to any so called trauma, but to worry, grief, etc. The Weir-Mitchell rest cure was itself suggestive therapeutics. The speaker used suggestion constantly in his practice. There was no one who was not more or less affected by suggestion, and certainly none more than the neurasthenic. In this way hope could be instilled into the despairing patient. He was often frightened, fearing some catastrophe, such as insanity or suicide, or that he was the subject of incurable heart disease. When, however, the real condition of affairs was explained to him, he would take courage and, his mind being thus relieved of its doubts and fears, he would get well. Such was the part which suggestion played in the treatment of these cases. It was a bona fide and efficient mode of treatment. We might easily overdo it, however, and in every instance it was requisite to employ it in accordance with the characteristics of the patient. When one had won over his intelligence, and thus secured his confidence, much had been accomplished. The methods of Freud and Dubois, suggestion and Christian Science, when analyzed, all came down to the same thing, the influence of the physician or operator on the patient's personality.

Dr. George W. Jacoby spoke as follows: In all scientific questions, but more especially in medical ones, it is a good plan every now and then to stop for a breathing spell, and, so to say, to take an account of stock. If we do this with the question under consideration, we find that the history of psychotherapy and psychology represents a sinusoidal curve. Far back—so far back that none of us here present have any practical cognizance of it—lies the time when all psychic trouble was looked upon as a result of moral turpitude, with an effect that the "treatment" so called consisted in an endeavor to drive out the bad spirits which had taken possession of the sufferer. The triumphal procession of the natural sciences then created a complete reversal of ideas. The dualistic conception of the separation of body and soul was overthrown and replaced by the concept of the interdependence of brain and mind. Then science laid special stress upon the dependence of the psyche upon the brain, and psychology gave place to a study of brain physiology. With this materialistic conception, our treatment of psychic disturbances naturally also became a materialistic one, and of late years, I am sorry to say, one sidedly materialistic. Hydrotherapy, electrotherapy, rest cures, and medicinal treatment were carried on with the sole thought of their action upon the anatomical structures of the body. More recently the pendulum has swung backward—which in this case must be considered a progress—and much thought has been given to the psychic action of all our remedies. Psychotherapy to-day rests upon a psychological and physiological basis. This has brought with it much clearness in our concepts and much good to our patients, but the exaggerations of modern psychotherapy are also noticeable. In all psychotherapy the temptation is strong to give attention only to the mental symptoms. This, of course, is wrong. Psychotherapy can and must constitute but one part of our treatment in any given case. If psychotherapy is, as Munsterberg well says, "an effort for us to repair the disturbed equilibrium of human functions by influencing the mental life," then, knowing that all mental action is quite as dependent upon physical processes as such processes are dependent upon mental action, we cannot imagine any psychotherapy *per se*, but only a psychotherapy as part of general medical treatment of the individual.

To what extremes this error of unilateral bias may lead is shown not only by the vagaries of Schlatterism, Eddyism, and Emmanuelism, but also by the edicts of a Dubois, who absolutely condemns the use of all aperients in chronic constipation and of hypnotics in any form of insomnia. Even not free from exaggeration is the system which of late years has attracted more attention than any other, that of Freud. Freud's psychological studies, published in 1895, are undoubtedly of great scientific value, but when he makes the result to which these studies led him, namely, "no neuroses without disordered sexual life," the basis of his therapeutic endeavors, then we must say that his edifice is unsafe, because it rests upon a foundation of quicksand. Freud's method is open to much serious criticism. First and foremost stand his peculiar views, just mentioned, as to the origin of obsessions, Freud stating that almost all have their origin in some sexual act done or allowed in childhood. There can be no doubt that he exaggerates and overestimates this factor, and no doubt that he has by his method suggested memories of sexual occurrences where such occurrences have never taken place. Furthermore, by his method he produces a state of autosuggestion, and with it an added hysterical state. Finally, the advantages which he himself alleges must to us practical men seem doubtful, for the length of time required to effect what he calls a cure is from six months to three years, with daily sittings of one or more hours. Now, what he calls a cure is freeing the patient from his false concepts;

but if psychotherapy—no matter what is understood thereby—merely relieves the patient of his false concepts, and cannot give him something positive and beneficial to replace them, then the entire method must be looked upon as a failure. Therefore, practically, we must have adjuvants. Here electricity, hydrotherapy, massage, etc., will have their place, but what we still require most for our patient is work of some kind—occupation, persistent and absorbing.

This brings us to the question of why psychotherapy may not be carried on by any one but a physician. There can be no doubt that this, like all other medicinal, surgical, or mechanical therapy, belongs to the physician and to no one else, not even the clergyman. No remedy has only a beneficial side. Any remedy which is health giving may also be disease producing, and so it is with suggestion, the basis of all psychotherapy. Much hysteria may have been relieved by suggestion in the hands of clergymen and other unqualified persons, but certainly much hysteria has thereby been produced. The ill effects of any and every remedy can be avoided or relieved only by the schooled physician. In this there is no middle road; so that even the association of physician and clergyman is a partnership which cannot be condoned. One point or two more: We hear much to-day of autosuggestion—in fact the entire system has been elaborated and made the basis of much in the newer popular cults. Yet if we consider for one moment the idea of autosuggestion, we shall find that it represents a marked contradiction in itself. An autosuggestion depending upon one's own will is a monstrosity. How can we suggest to ourselves a thing which we do not believe? Any suggestion which can act as a suggestion must come from the outside; it must be independent of our will, or it is not suggestion. So, while I have no objection to the use of the word autosuggestion, if we understand among ourselves what is meant by it, it will be said that it is a very frail basis for the elaboration of any edifice. Finally, we must ask ourselves what is to be done in order to protect our patients against the craze of psychotherapy, so called, which has taken possession of the public and which quacks and charlatans of all kinds are utilizing to fleece the public and enrich themselves. There is, so far as I can see, but one answer to the question, and that is, the public must be educated and we are the people to do it. We are in possession of the proper facts, and we are the ones who should appeal directly to the public by means of popular lectures and books and who should instruct them in the principles of psychology and give them a knowledge of true psychotherapy. Papers before medical societies are all very well, but they do not go far enough. The physician needs but little instruction upon this subject, while the public needs much. Let us no longer be followers, but let us be leaders; and let us furnish the public with the unvarnished truth, no matter who may suffer, so long as our patients are benefited.

Dr. W. M. Leszynsky said: This discussion is timely and valuable, as many members of the medical profession have an inadequate or erroneous conception of the prevailing views as to practical psychotherapy. Again, others have given the subject no attention at all, or it receives unjust condemnation or adverse criticism. On the other hand, there is an increasing majority who deem it worthy of careful consideration and analysis. The viewpoints of the general practitioner and of the neurologist upon this topic are essentially different, and often more or less antagonistic. Psychotherapy should not be characterized as a method confined to special forms of psychological analysis, persuasion, and hypnotic suggestion. Within its sphere we must include isolation, educational methods (physical, moral, and intellectual), healthful occupation and diversion, encouragement, etc. An idea may be pathogenic or therapeutic. According to circumstances, it may prove beneficial or malign. One does not always realize the immediate or remote effect upon the patient of some inadvertent or discouraging remark. Many susceptible and sensitive people are thus unfavorably influenced, and their subsequent brooding is not satisfactorily neutralized by the accompanying prescription. The man who thoughtlessly tells his patient there is no hope for him, or implies as much, by his manner or remarks, is, to say the least, an undesirable representative of intelligent psychotherapy. Special methods of psychotherapy in nervous diseases, such as the reeducation method of Dubois, Freud's analytic method, and hypnotic suggestion, all have their limited fields of usefulness, and should be selected with careful discrimination. But any form of psychotherapy alone, in the vast majority of instances, cannot successfully supplant a rational plan of modern medical treatment adapted to the individual and based upon the regulation of diet, habits, and occupation, hydrotherapy, physical exercise, the judicious use of drugs, etc.

As an adjuvant to customary forms of treatment, unsystematized psychotherapy is unconsciously or deliberately utilized by all physicians in their daily work; but its practice, as a special or exclusive method, presupposes special skill and training, and is applicable only in suitable cases of hysteria, impulsive or irrepressible ideas, obsessions, hypochondriasis, etc. It requires much time, patience, and perseverance, and its successful utilization depends in a large measure upon the personal influence of the physician and the receptivity, intelligence, credulity, and faith of the patient. It is more effective and permanent in its result under radical change of environment. In some psychasthenic cases a favorable opinion of the patient's condition, emphatically expressed in writing and presented to the patient, often proves more impressive and beneficial than repeated and, at times, almost interminable verbal assurances and reassurances. A number of my patients have carried such letters with them for several years, with the most satisfactory results. However, psychotherapy is by no means a panacea in the psychoneuroses, its usefulness being limited. The recent wave of public opinion, fostered by a superabundance of psychotherapeutic literature, ranging from that based upon sound psychological principles to that of blatant self advertising, has naturally resulted in overestimation and exaggeration of its importance. In an overzealous and apparently irrepressible activity in this direction the fundamental element of preliminary diagnosis has often been ignored, to the detriment of the patient and the ridicule of the medical profession. The medical profession and the public will, in due time, realize that attempts at the indiscriminate use of exclusive psychotherapy by untrained operators will inevitably result in a rapid increase in the ranks of the psychopaths. Whatever form of medical treatment is instituted, be it psychic, physical, or medicinal, it is the prerogative of the educated and specially trained physician, and should not be relegated to others.

Dr. **Edward Wallace Lee** said he had been familiar with psychotherapy for a considerable number of years, and he could not sanction it in any way. While it might possibly have been of some benefit in certain instances, in many others it had resulted in harm to the patient. Foolish people were apt to be easily influenced by the Eddyites, who affected to consider all disease as an "error in human mind." The medical profession could not afford to countenance Christian Science to the slightest extent, and it seemed to him that the remarks of one of the speakers in reference to it were calculated to have a bad effect. It was to our shame that we were not in a better position to-day as regarded such fraudulent practices. When he had made a correct diagnosis, and then only, the physician was competent to say whether such and such a treatment was likely to prove of benefit or not. The medical profession had a great deal to contend with now, and from a selfish point of view, if for no other consideration, we had a difficult task to maintain ourselves.

The **President** said that the presentation of the subject in these papers, each with its own line of thought, had been an illuminating one. It was noticeable that there was a great diversity of opinion in them, and not one of the four neurologists who had taken part in the discussion was willing to express his entire confidence in either the Dubois or the Freud method. The case in its various aspects, it might be said, was now before the jury for its verdict, the jury being the great body of general practitioners. It would appear that the proper field of psychotherapy was an exceedingly limited one, and that its practice would be most successful when under the direction and absolute control of the educated physician, while its reputation as a remedial method would suffer from the unwarranted exploitation of its more or less ill informed lay advocates.

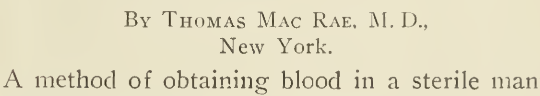
Dr. **Fisher** said that in discussing the subject of psychotherapy the general idea in his paper was to protest against its employment as a separate entity, a special school of treatment. Unquestionably there was much that was excellent in it. The important thing was to decide who should practise it. However much benefit there might be in mental suggestion, we should not lose sight of the danger of depending on that alone, or of the very limited field in which psychotherapy was applicable. There might in any given case be some grave underlying physical condition upon which this kind of treatment could have no effect, and there was therefore the danger of failing to recognize this until it was too late for treatment of any kind to be of service. In the last twenty years nothing very novel had been promulgated in the department of psychotherapeutics, although we were now better qualified than formerly to discriminate in the matter. Dubois's book was filled with beautiful thoughts, and no one could read it appreciatively without an inclination to lead a better life. But in it we did not find any definite line of treatment. There was simply the kind of advice which all of us, on occasion, would give to some friend in trouble. In Freud's work, on the other hand, there was prescribed a definite method of treatment, which any one, after a proper study of the subject, could carry out. But the question arose, Is the Freud treatment, after all, of any real benefit? If we failed to get results from the method in any given instance, the disciple of Freud would be sure to say to us: "But you did not treat the case properly." The difficulty about the system was that it was not generally practicable, requiring too much time. Dr. Fisher's own position was that the practice of psychotherapy should always be associated with appropriate medical treatment, as commonly understood. He had not taken up the matter of Christian Science seriously, because, this being a religious cult and not simply a method of treatment, it involved a wider field than that which we were now considering. But he did think that we could make use of psychotherapy to a limited extent as an adjuvant to the ordinary forms of treatment, though we ought by all means to discourage any attempt to establish it as a separate school of therapeutics.

New Inventions.

A NEEDLE FOR VENOUS PUNCTURE.

By Thomas Mac Rae, M. D.,
New York.

A method of obtaining blood in a sterile manner in sufficient quantity for blood cultures, or for the Wassermann reaction, is not difficult but requires some attention. The various apparatus obtainable are more or less troublesome to clean and to sterilize and inconvenient to carry, or if simple, as a single needle, do not work in a sufficiently large number of cases. I have used Lüer's and several other syringes, the Ewing tube, capillary pipettes, and a needle in favor in Germany for venous puncture, but have found them more time consuming, and requiring more precautions than the needle here described.



This needle was devised in April of this year and has since been used, practically exclusively, in taking specimens of blood from veins of some seven hundred patients for Wassermann reactions. It is easy to sterilize and simple to use and to keep in working order, and works well in practically any case requiring venous puncture, the amount of blood taken being easily and instantly regulated. Its advantages are perhaps more apparent where large numbers of specimens are being taken, but they hold good with only one specimen.

In the beginning two hollow needles passed through a rubber stopper were used. Later, for convenience, they were combined into the form illustrated: One longer needle for the vein puncture through which the blood flows into the sterile test tube or container without further manipulation; one shorter needle to which is attached a piece of small, stiff rubber tubing for suction. (I use a No. 14 Van Horne catheter, cutting off each end.) The two needles soldered together are pushed through a rubber stopper fitting the test tube or flask to be used. The needle remains in this stopper constantly and is boiled with it *in situ.* One might use almost any container, the only necessity being an air tight joint around the stopper—the smaller container, e. g., test tube, obviously is of advantage. Routinely I use 8c.c. test tubes, 30c.c. test tubes, and small Erlenmeyer flasks. These are kept sterilized, corked, and labelled ready for use.

The longer needle is one and three eighths inches from penetrating tip to top of stopper and one and one quarter inches below, the shorter one three eighths inches above and seven eighths below. No. 18 needle tubing is used for the longer, No. 16 for the shorter, as these sizes are about the smallest one can use without spending more time in caring for still smaller ones. Different lengths also have been tried and the ones given are those now used.

In using the needle it is dropped into water and boiled for three or four minutes, taken out, held by the upper end of the stopper, the wire in the lumen removed, the catheter slipped on the rounded needle end, and the rubber stopper carrying the needle fitted into the end of a sterile tube just previously uncorked. The patient's arm having previously been washed in small area over a prominent vein with soap, a few drops of alcohol are poured over this place. Usually the most convenient vein is the median basilic or cephalic, but occasionally a branch of the internal saphenous and in infants the superficial temporal is more accessible. It is very seldom necessary to use a tourniquet, the arm held down for two or three minutes being sufficient to fill the vein. Now, with the end of the rubber tube in the examiner's mouth, using gentle suction, the needle is thrust quickly into the vein. As soon as the lumen of the vein is entered the blood flows under pressure in a stream into the container, ceasing if suction is released. When a sufficient quantity is obtained place a small pad of sterile cotton on the vein over the end of the needle still in place, remove the needle with a quick jerk and elevate the arm, the patient holding the cotton gently against the small puncture. Keep the arm elevated for two or three minutes then apply a drop of collodion. No further care of the puncture is necessary although tight arm bands should not be used for a few hours. Failure to follow directions might result in hæmatoma or ecchymosis. Even slight ecchymosis is rare, and at no time has other trouble occurred.

The needle should be washed out at once. This can be easily done by holding under a tap or by using a similar test tube to the one in which the blood is obtained; fill with water, invert, and blow through rubber tube, forcing a stream of water through the needle. Replace the wire in the lumen of the straight needle (I do not trouble to put wire in the other needle though this can be done if necessary), boil, and dry. This second boiling is for cleanliness and safety from accidental pricking. Further care is little. The point needs occasionally to be rubbed on a whetstone—one should see invariably that the point is keen before attempting to use it and that the lumen is pervious.

For carrying this needle sterilized a test tube slightly larger is used. The needle, a tube, and cork, are boiled, the freshly boiled tube is partly filled with alcohol, and the needle placed in it.

271 West Seventy-third Street.

Letters to the Editor.

A PROTEST BY A YOUNG PRACTITIONER

916 North Sixth Street,
Philadelphia, *December 12, 1910*

To the Editor:

Do the older practitioners, as a class, treat the beginner in the practice of medicine fairly? Do they set the young man a proper example in their relations toward him (judged from the ethical standpoint)? I answer, No! Let me illustrate what I mean by citing an actual case.

Not very long ago, when I first started in the practice of medicine, I had the following experience, an experience which shocked me to such a degree that I could not eat my meals as usual for nearly three days. I had been called to see a patient who gave the typical history of the onset of lobar pneumonia. After expressing my opinion I prescribed and left the patient for that day. The next day I called, and confirmed my original diagnosis by my objective findings. The family was new to me, and I did not blame them for desiring the opinion of an older man. Disregarding their promise to me, they surreptitiously sent for the physician who had formerly served them in the capacity of family physician. He came, and, according to the statement of the patient's wife, tossed my medicine aside as worthless, made a few uncomplimentary remarks about me, pronounced the case one of typhoid fever, ordered ice to the head and sponging, and also prescribed different medicine. This complete revolution in the diagnosis and treatment, instead of allaying the uncertainty of the family, had just the opposite effect. They forthwith sent for a third physician, who pronounced the case pneumonia, prescribed fresh medicines, and thereafter retained the case. It may or may not interest you to know that the patient recovered; but I did not. Somewhere within me there has remained a chronic infection (?) or anaphylactic state (?) which tends to undergo a recrudescence at each new experience of a similar nature that I encounter.

I appeal to the medical profession, particularly to the older men, to give this matter their earnest consideration. Would it not arouse more respect in the lay people and would it not be far better for us if such incidents did not occur? Can the doctors who deal thus dishonestly toward the younger man expect the respect or the loyalty which we otherwise should feel toward them? Should they not rather, as a class of educated and enlightened men, show more humaneness in their rush after the almighty dollar than is manifested by less intelligent, less refined men? We know that the medical profession is overcrowded, but that is no reason why men who have been years in the practice of medicine, and who have acquired quite a reputation among the lay people, should have been the perpetrators of deeds such as I have above cited.

H. A. SCHATZ, M. D.

IODINE AS AN ANTISEPTIC.

345 PLEASANT AVENUE,
NEW YORK, *December 15, 1910.*

To the Editor:

I just happened to peruse an article in your valuable paper of December 3, 1910, by Major Frank T. Woodbury, on iodine. He professes to have introduced iodine as a general disinfectant to the medical profession as early as 1906. I take exception to his statement. While connected with St. Mark's Hospital, in 1905, I used iodine for the same purposes that he enumerates in the article. Anybody who was a member of the house staff at that time will corroborate me and say how I was ridiculed by them for my great faith in tincture of iodine as a disinfectant. In the emergency ward I sutured hundreds of primary wounds without washing them, by simply applying tincture of iodine, and got perfect primary union. Since 1907 I have been using it in the Mt. Sinai Hospital Dispensary with the same results, proving that iodine is one of the best disinfectants we possess.

EUGENE BAUMAN, M. D.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Essentials of Histology. Descriptive and Practical. For the Use of Students. By E. A. SCHÄFER, M. D., Sc. D., LL. D., F. R. S., Professor of Physiology in the University of Edinburgh, etc. Eighth Edition. Philadelphia and New York: Lea & Febiger, 1910. Pp. xi-571. (Price, $3.50.)

The number of editions that this book has appeared in during the past twenty-five years is justified by its admirable arrangement and practical features. A number of additional illustrations have been included in this volume, and it is worthy of its predecessors and will continue their reputation.

American Red Cross Abridged Textbook on First Aid. Industrial Edition. A Manual of Instruction. By Major CHARLES LYNCH, Medical Corps, United States Army, and First Lieutenant M. J. SHIELDS, Medical Reserve Corps, United States Army. Prepared for and Endorsed by the American Red Cross. With Forty-nine Illustrations. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xii-175. (Price, 30 cents.)

The excellent work that is being accomplished by the Red Cross Society in this country is shown in part by the publication of this little manual of first aid, which is to appear in Polish, Lithuanian, Italian, and Slovak, so as to be used and understood by workmen who know only some one of those languages. The authors have organized classes in first aid in many parts of the country and their experience has taught them what and how to teach. We trust this little book will accomplish all the good that it should.

Dawn of the Fourth Era in Surgery. And Other Short Articles Previously Published. By ROBERT T. MORRIS, A. M., M. D., Professor of Surgery in the New York Postgraduate Medical School and Hospital, etc. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 145. (Price, $1.25.)

This is a collection of articles that were published originally in medical journals and that are well worth reading by all medical men. They are written in the author's trenchant yet pleasing style, for, as he writes, "in order to mould professional thought it is not necessary to take life seriously, if at all"; and it is to be hoped that surgeons will realize that the fourth, or physiological, era of surgery is upon us, and that the operator will leave the patient in the best condition to make those antibodies that will aid to recovery.

A Manual of Hygiene and Sanitation. By SENECA EGBERT, A. M., M. D., Professor of Hygiene and Dean of the Medico-Chirurgical College, of Philadelphia, etc. Fifth Edition, Enlarged and Thoroughly Revised. Illustrated with Ninety-seven Engravings. Philadelphia and New York: Lea & Febiger, 1910. Pp. 508. (Price, $2.25.)

The author states that the demand for a new edition has enabled him to give this work a careful revision, which has involved some changes in statement, some rewriting, and the addition of a number of pages of new matter, so as to bring the contents up to date and maintain the reputation of a trustworthy manual. It is clear, concise, and an excellent guide.

Practical Nursing. For Male Nurses in the R. A. M. C. and Other Forces. By Major E. M. HASSARD, R. A. M. C., and A. R. HASSARD. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xiii-339

This is a practical and well arranged book that seeks to instruct the would be nurse in those things like bed making, washing, application of heat and of cooling agents, and other procedures essential for the comfort and welfare of the sick, and then describes the features of nursing in special diseases and injuries. It does not aim to give too much and what is often nonessential, detail, and the style can be understood easily by the untrained reader.

Dust and Its Dangers. By T. MITCHELL PRUDDEN, M. D. Second Edition, Illustrated. New York: G. P. Putnam's Sons, 1910. Pp. 113. (Price, 75 cents.)

We are glad that the helpful work that has been accomplished by this admirable book will be continued in the revision the author has given it for this second edition, and it is to be hoped that this "plea for clean air" may reach a large and impressible audience.

NEW PUBLICATIONS.

Bandelier und Roepke.—Lehrbuch der spezifischen Diagnostik und Therapie der Tuberkulose. Für Aerzte und Studierende. 5. erweiterte und verbesserte Auflage. Mit einem Vorwort von wirkl. Geh. Rat Prof. Dr. R. Koch, Exzellenz. Mit 19 Temperaturkurven auf 5 lithographischen Tafeln, 1 farbigen lithographischen Tafel, und 4

Textabbildungen. Würzburg: Curt Kabitzsch, 1911. Pp. xii-292.

Bandelin und Roepke.—Die Klinik der Tuberkulose. Handbuch der gesamten Tuberkulose für Aerzte und Studierende. Würzburg: Curt Kabitzsch, 1911. Pp. x-466.

Herschell, George.—The Nonsurgical Treatment of Duodenal Ulcer. London: Henry J. Glaisher, 1910. Pp. 39.

Rosenberg, Albert.—Pathologie und Therapie der Rachenkrankheiten. Mit 50 Abbildungen. Wien und Leipzig: Alfred Hölder, 1911. Pp. vi-164.

Kindborg, Erich.—Theorie und Praxis der inneren Medizin. Ein Lehrbuch für Studierende und Aerzte. Erster Band. Die Krankheiten der Zirkulations- und Respirationsorgane. Mit 47 Abbildungen. Berlin: S. Karger, 1911. Pp. xii-404.

Bregman, L. E.—Diagnostik der Nervenkrankheiten. Mit einem Geleitwort von Hofrat Prof. Dr. H. Obersteiner in Wien. Mit 193 Abbildungen und 2 Tabellen. Berlin: S. Karger, 1911. Pp. xvi-535.

Boas, Harald.—Die Wassermann'sche Reaktion. Mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Mit einem Vorwort von Geh. Med.-Rat Prof. A. Wassermann. Berlin: S. Karger, 1911. Pp. vi-186.

Schüle, A.—Wesen und Behandlung der Achylia gastrica. Halle a.S.: Carl Marhold, 1910. Pp. 44.

Gutzmann, Hermann.—Kussmaul's Die Störungen der Sprache. Versuch einer Pathologie der Sprache. Vierte Auflage. Leipzig: F. C. W. Vogel, 1910. Pp. x-409.

Jeffreys, W. Hamilton, and Maxwell, James L.—The Diseases of China, Including Formosa and Korea. With Five Colored Plates, Eleven Nosogeographical Plates, and 360 Illustrations in the Text. Philadelphia: P. Blakiston's Son & Co., 1910. Pp. xvi-716. (Price, $6.)

Aarons, S. Jervois.—Gynæcological Therapeutics. With Foreword by Sir Halliday Croom, M. D., F. R. C. P., F. R. C. S. New York: William Wood & Co., 1910. Pp. xiv-178. (Price, $2.)

Hare, Hobart Amory, and Landis, H. R. M.—Modern Treatment. The Management of Disease with Medicinal and Nonmedicinal Remedies. In Contributions by American and Foreign Authorities. Edited by Hobart Amory Hare, M. D., assisted by H. R. M. Landis, M. D. In Two Volumes. Volume I. Illustrated. Philadelphia and New York: Lea & Febiger, 1910. Pp. xii-930.

Bean, Robert Bennett.—The Racial Anatomy of the Philippine Islanders. Introducing New Methods of Anthropology and Showing their Application to the Filipinos, with a Classification of Human Ears and a Scheme for the Heredity of Anatomical Characters in Man. With Nineteen Illustrations Reproduced from Original Photographs. Seven Figures. Philadelphia and London: J. B. Lippincott Company, 1910. Pp. 236.

Parke, J. Richardson.—The Wizard of the Damavant. A Tale of the Crusades. Twenty-eight Illustrations. Philadelphia: Professional Publishing Company, 1910. Pp. 445.

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Miscellany.

Historical Data on Scalping.—Davis, in an article on the Treatment of Scalping Accidents in the *Annals of Surgery*, December, 1910, gives very interesting historical data on scalping. He says:

> It is generally supposed that the practice of scalping was peculiar to the American Indian, but it has been shown by Burton that this custom was not uncommon among the Asiatics, Europeans, and Africans, from the earliest times.
>
> Friederici believes that the custom of scalping was unknown among Mongolians. He says that scalping is mentioned twice in the Bible, II Maccabees, 7, 7, and Deuteronomy, xxxii, 24 (?); but that there is nothing at all in the original and in the Septuaginta which could be interpreted as showing the existence of the custom of scalping among the Israelites; furthermore, that Herodotus gave the only clear description of a scalping people (Scythians) of the old world, and that everything else on this subject appertains only to hints, beginnings, or remnants.
>
> The Abbe Em. Domenech (*Seven Years' Residence in the Great Deserts of North America*, chap. 39) quotes the "declavare" of the ancient Germans, the "capillos et cutem detrahere" of the code of the Visigoths, and the *Annals of Fluor* (Flude) to prove that the Anglo-Saxons and the French still scalped about A. D. 879.
>
> Friederici says, after an extensive investigation, he has been unable to confirm these annals.
>
> There is no doubt but that the American Indians were accustomed to scalp their enemies long before the discovery of this country by Columbus, and each tribe had its own method of scalping which was passed down from generation to generation. The amount of scalp removed, by the different tribes, varied from about the size of the tonsure of a monk to the whole scalp.
>
> Up to thirty years ago scalping by Indians was of common occurrence on our Western frontier, although the cases were seldom reported in medical literature, but of late years this method of scalping has, happily, become exceedingly rare.

The Use of Diphtheria Antitoxine.—*The Monthly Bulletin, New York State Department of Health*, for August, gives interesting notes on the use of diphtheria antitoxine:

> The recent study and tabulation of the statistics of the State antitoxine service for 1909 have shown that 36,643,500 units of diphtheria antitoxine were supplied by that service for that year. Every city in the State of New York, with the exception of New York, was supplied or reported some use of the State antitoxine. Of 932 towns in the State, only 273 received supplies of diphtheria antitoxine; and of 450 villages, only 169 were thus supplied. New York City makes ample provision for supplying its own citizens with proper antitoxines, and for that reason is not supplied by the State.
>
> In other words, every city in the State has supplied to its citizens to meet every case of necessity, without cost, and on a simple request for such supply from the local health officer, all antitoxine that may be desired for immunization, prophylactic treatment, or any degree of curative administration that any physician practising in the State may wish to utilize for a case of diphtheria or tetanus. But the unanimity of utilization of State antitoxine by its cities stands in strong contrast to the failure of 659 towns—practically two thirds of all the towns in the State—and the failure of 281 villages—practically two thirds of all the villages in the State—to obtain or to use the State antitoxines. . . .
>
> Some 5,300 cases of this diphtheria were cared for by the State antitoxine service, but in spite of special energetic efforts of the department since October of last year to secure a more complete compliance on the part of the physicians with their obligation to report these cases, only about 1,800 such reports have been received.

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Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service for the week ending December 16, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Ambos Camarines	Oct. 23-29	10	10
Philippine Islands—Batangas	Oct. 16-29	31	25
Philippine Islands—Bulacan	Oct. 16-29	14	13
Philippine Islands—Cavite	Oct. 23-29	4	3
Philippine Islands—Ilocos Sur	Oct. 16-29	24	20
Philippine Islands—Manila	Oct. 16-29	3	
Philippine Islands—Mountain	Oct. 16-22	3	2
Philippine Islands—Nueva Ecija	Nov. 16-29	6	4
Philippine Islands—Rizal	Nov. 16-29	26	14
Philippine Islands—Tarlac	Nov. 16-29	5	5
Cholera—Foreign.			
Arabia—Mascat	Oct. 29-Nov. 5	8	8
Arabia—Surur	Oct. 29-Nov. 5		Present
Austria-Hungary—Gratz	Nov. 7	1	
China—Fa Ti	Oct. 21	6	5
China—Pathoi	Sept. 17		Present

Place.	Date.	Cases.	Deaths.
Federated Malay States — Kwala Lumpur	Oct. 22		Present
India—Bombay	Nov. 2-8		1
India—Calcutta	Oct. 16-22		25
India—Madras	Oct. 28-Nov. 2		3
Italy—General	Dec. 1-6	55	6
Italy—Caltanisetta, province	Nov. 13-19	2	1
Italy—Campobasso, province	Nov. 13-19	1	
Italy—Caserta, province	Nov. 13-19	25	6
Italy—Girgenti, province	Nov. 13-19	1	
Italy—Leece, province	Nov. 13-19	1	1
Italy—Naples, exclusive of the city of Naples	Nov. 13-19	6	1
Italy—Palermo, province	Nov. 13-19	10	
Italy—Rome, province	Nov. 13-19	10	1
Japan—Kobe	Nov. 6-12		5
Japan—Tokyo	Oct. 17	1	1
Java—Batavia	Oct. 23-29	6	3
Java—Pasoeroean	Aug. 11-Sept. 10	68	63
Java—Samarang	Aug. 1-Sept. 10	189	170
Russia—General	Oct. 23-29	449	279
Russia—General	Oct. 30-Nov. 5	170	110
Russia—Akmolinsk, territory	Oct. 23-29	14	9
Russia—Akmolinsk, territory	Oct. 30-Nov. 5	3	3
Russia—Amur, territory	Oct. 30-Nov. 5	9	11
Russia—Amur, territory	Oct. 23-29	15	7
Russia—Baku, prefecture	Oct. 23-29	1	
Russia—Baku, prefecture	Oct. 30-Nov. 5	2	1
Russia—Cronstadt, city	Oct. 23-29		3
Russia—Eastern Siberia, territory	Oct. 23-29	149	140
Russia—Eastern Siberia, territory	Oct. 30-Nov. 5	25	29
Russia—Ekaterinoslav, government	Oct. 23-29	8	7
Russia—Ekaterinoslaw, government	Oct. 30-Nov. 5	8	7
Russia—Erivan, government	Oct. 23-29	9	2
Russia—Ferganah, territory	Oct. 23-29	8	5
Russia—Fergansh, territory	Oct. 30-Nov. 5	2	6
Russia—Kherson, government	Oct. 23-29	8	3
Russia—Kherson, government	Oct. 30-Nov. 5	3	1
Russia—Kieff, government	Oct. 23-29	17	4
Russia—Kieff, government	Oct. 30-Nov. 5	21	9
Russia—Koursk, government	Oct. 23-29		1
Russia—Kuban, territory	Oct. 23-29	2	4
Russia—Moguilew, government	Oct. 30-Nov. 5	1	
Russia—Mohileff, government	Oct. 23-29	3	2
Russia—Odessa, prefecture	Oct. 23-29	1	
Russia—Olonetz, government	Oct. 23-29		1
Russia—Orenburg, government	Oct. 23-29	13	4
Russia—Orenburg, government	Oct. 30-Nov. 5	26	11
Russia—Perm, government	Oct. 23-29	1	
Russia—Podolia, government	Oct. 23-29	15	7
Russia—Podolia government	Oct. 30-Nov. 5	1	1
Russia—Samara, government	Oct. 23-29	53	20
Russia—Samara. government	Oct. 30-Nov. 5	26	9
Russia—Saratoff, government	Oct. 23-29	16	8
Russia—Saratow. government	Oct. 30-Nov. 5	5	4
Russia—Sebastopol, prefecture	Oct. 30-Nov. 5	2	2
Russia—Simbirsk, government	Oct. 23-29	5	7
Russia—St. Petersburg, city	Oct. 23-29	76	29
Russia—St. Petersburg, city	Oct. 30-Nov. 5	25	15
Russia—St. Petersburg, government	Oct. 23-29	5	3
Russia—St. Petersburg, government	Oct. 30-Nov. 5	3	1
Russia—Syr-Daria, territory	Oct. 23-29	1	
Russia—Syr-Daris, territory	Oct. 30-Nov. 5	1	
Russia—Tiflis, government	Oct. 23-29	1	
Russia—Tiflis, government	Oct. 30-Nov. 5	1	
Russia—Tobolsk, government	Oct. 23-29	5	2
Russia—Tomsk, government	Oct. 23-29	1	
Russia—Tourgai, territory	Oct. 30-Nov. 5	1	
Russia—Transcaspian, territory	Oct. 30-Nov. 5	1	
Russia—Veronege, government	Oct. 30-Nov. 5	3	2
Russia—Vitebsk, government	Oct. 23-29	15	8
Russia—Vitebsk, government	Oct. 30-Nov. 5	1	1
Russia—Vologda. government	Oct. 23-29		
Russia—Voronej, government	Oct. 23-29	5	5
Servia—Belgrade	Oct. 7-Nov. 8	4	1
Servia—Passarowitz	Oct. 7-Nov. 8	1	1
Turkey in Asia—Basra	Oct. 28-Nov. 5	97	61
Turkey in Asia—Basra, vicinity	Oct. 28-Nov. 5	112	76

Yellow Fever—Foreign.

Brazil—Manaos	Oct. 23-Nov. 12		4
Brazil—Para	Nov. 13-19	46	18
Ecuador—Guayaquil	Oct. 16-31	8	2
Venezuela—Caracas	Nov. 13-26	3	3

Plague—Foreign.

Brazil—Bahia	Oct. 1-7	1	1
China—Shanghai	Oct. 28-Nov. 5	6	6
Ecuador—Guayaquil	Oct. 16-31	85	33
India—Bombay	Nov. 2-8		12
India—Calcutta	Oct. 16-22		7
India—Kurrachee	Oct. 31-Nov. 5	6	6
India—Rangoon	Oct. 23-29		3
Manchuria—Hailar	Nov. 10	3	1
Manchuria—Harbin	Nov. 10	1	1
Manchuria—Jalai Nor Mines	Nov. 10	14	12
Manchuria—Manchuria Station	Oct. 25-Nov. 19	188	166
Mauritius	Sept. 2-29	41	26
Peru—Arequipa. Mollendo, department	Nov. 15	1	
Peru—Callao, department	Sept. 1-Oct. 31	6	
Peru—Callao, department	Nov. 12	1	
Peru—Lambayeque, department	Sept. 1-Oct. 31	2	2
Peru—Libertad, department	Sept. 1-Oct. 31	48	27
Peru—Libertad, department	Nov. 12		Present
Peru—Lima, department	Sept. 1-Oct. 31	18	8
Peru—Lima, department	Nov. 12	2	1
Peru—Piura, department	Sept. 1-Oct. 31	2	1
Portugal—Lisbon	Nov. 3-8	2	1
Russia—Odessa	Oct. 29-Nov. 19	6	1

Smallpox—United States.

Colorado—Archuleta County	Nov. 1-30	1	
Colorado—Boulder County	Nov. 1-30	4	
Colorado—Conejos County	Nov. 1-30	2	
Colorado—Denver County	Nov. 1-30	23	
Colorado—Fremont County	Nov. 1-30	3	
Colorado—Grand County	Nov. 1-30	1	
Colorado—Huerfano County	Nov. 1-30	8	
Colorado—Jefferson County	Nov. 1-30	1	
Colorado—La Plata County	Nov. 1-30	7	
Colorado—Larimer County	Nov. 1-30	1	
Colorado—Las Animas County	Nov. 1-30	47	
Colorado—Montezuma County	Nov. 1-30	2	
Colorado—Montrose County	Nov. 1-30	1	
Colorado—Pueblo County	Nov. 1-30	2	
Colorado—Rio Grande County	Nov. 1-30	2	
Colorado—Weld County	Nov. 1-30	6	
Iowa—Linn County	Nov. 1-30	9	
Iowa—Page County	Nov. 1-30	41	
Louisiana—New Orleans	Nov. 27-Dec. 3	5	
Minnesota—Clay County	Nov. 21-27	1	
Minnesota—Douglas County	Nov. 1-20	3	
Minnesota—Hennepin County	Nov. 14-20	3	
Minnesota—Kittson County	Nov. 1-6	1	
Minnesota—Mower County	Nov. 14-20	1	
Minnesota—Ottertail County	Nov. 20-27	3	
Minnesota—Ramsey County	Nov. 14-27	10	
Minnesota—Todd County	Nov. 14-27	4	
Mississippi—Gulfport	Nov. 24-30	2	1
Montana—Silver Bow County, exclusive of Butte	Oct. 1-31	2	
Montana—Butte	Oct. 1-31	16	
North Dakota—Cass County	Nov. 1-30	5	
North Dakota—Ward County	Nov. 1-30	4	
Oklahoma—Bryan County	Oct. 1-31	6	
Oklahoma—Cleveland County	Oct. 1-31	4	
Oklahoma—Garfield County	Oct. 1-31	1	
Oklahoma—Grady County	Oct. 1-31	2	2
Oklahoma—Jackson County	Oct. 1-31	1	
Oklahoma—Kay County	Oct. 1-31	1	
Oklahoma—McIntosh County	Oct. 1-31	22	1
Oklahoma—Marshall County	Oct. 1-31	7	
Oklahoma—Oklahoma County	Oct. 1-31	1	
Oklahoma—Texas County	Oct. 1-31	1	
Washington—Pierce Co., Tacoma	Oct. 1-31	3	
Washington—Skagit County	Oct. 1-31	2	

Smallpox—Foreign.

Argentina—Buenos Aires	Sept. 1-30		17
Argentina—Rosario	Aug. 1-Sept. 30		10
Brazil—Bahia	Oct. 1-7	16	10
Brazil—Santa Catharina, State of	Oct. 12	300	
Canada—Louisburg	Nov. 27-Dec. 3	1	
Canada—New Castle	Nov. 27-Dec. 3	3	
Canada—Sydney	Nov. 27-Dec. 3	3	
Canada—Victoria	Nov. 13-19	2	
Colombia—Cartagena	Nov. 13-19	8	
Chile—Valparaiso	Nov. 12		Present
China—Shanghai	Nov. 1-6	1	20
Egypt—Cairo	Nov. 5-11	2	
Germany—General	Nov. 6-12	4	
Gibraltar	Nov. 14-27	5	2
Italy—Naples	Nov. 13-19	9	
Japan—Kobe	Nov. 6-13	1	
Java—Batavia	Oct. 23-29	2	
Mexico—San Luis Potosi	Oct. 23-29	5	1
Portugal—Lisbon	Nov. 13-19	26	
Russia—Libau	Nov. 14-20		1
Russia—Riga	Nov. 6-19	37	
Russia—St. Petersburg	Nov. 6-12	33	7
Spain—Valencia	Nov. 13-19	1	
Straits Settlements—Penang	Sept. 4-Oct. 22	372	95
Turkey in Asia—Beirut	Nov. 6-19	10	1
Zanzibar—Zanzibar	Oct. 17-23	8	3

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending December 14, 1910:

BROOKS, S. P., Acting Assistant Surgeon. Granted seven days' leave of absence from December 12, 1910, under paragraph 210, Service Regulations.

BROWN, B. W., Surgeon. Relieved from duty at Vineyard Haven, Mass., and directed to proceed to Hong Kong for duty.

BROWN, F. L., Pharmacist. Granted seven days' leave of absence from December 24, 1910, under paragraph 210. Service Regulations.

CARTER, H. R., Surgeon. Granted five days' leave of absence en route to station.

DE VALIN, H., Passed Assistant Surgeon. Relieved from duty at Havana, Cuba, and, upon the return of Passed Assistant Surgeon J. S. Boggess from leave of absence, from temporary duty at Chicago, Ill., and directed to proceed to San Francisco, Cal., and report to Surgeon Rupert Blue for duty.

Foster, S. B., Acting Assistant Surgeon. Granted fifteen days' leave of absence, December 17, 1910.

McCoy, G. W., Passed Assistant Surgeon. Orders to proceed to Honolulu, T. H., revoked.

Stoner, G. W., Surgeon. Granted four days' leave of absence from December 7, 1910, under paragraph 189, Service Regulations.

Tarbell, B. C., Acting Assistant Surgeon. Leave of absence for thirty days from December 1, 1910, revoked.

Thompson, L. R., Assistant Surgeon. Directed to proceed to Almena, Wis., upon special temporary duty.

Williams, L. L., Surgeon. Granted three days' leave of absence from December 9, 1910.

Board Convened.

Board of medical officers convened to meet at Fort Trumbull, New London, Conn., December 9, 1910, for the physical examination of cadets of the Revenue Cutter Service, to determine their physical fitness for promotion. Detail for the board: Passed Assistant Surgeon C. L. Collins, chairman; Assistant Surgeon H. J. Warner, recorder.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 17, 1910:

Bartlett, C. J., Captain, Medical Corps. Granted leave of absence for one month and fifteen days.

Birmingham, H. P., Lieutenant Colonel, Medical Corps. Detailed member of an Army retiring board to meet at Washington, D. C.

Brown, Henry L., Captain, Medical Corps. Left Fort Morgan, Alabama, on fifteen days' leave of absence.

Craig, Charles F., Captain, Medical Corps. Detailed to represent the Army at the meeting of the American Association for the Advancement of Science to be held at Minneapolis, Minn., December 27-30, 1910.

Cutliffe, William O., Lieutenant, Medical Reserve Corps. Reports departure from treatment at Walter Reed General Hospital, Takoma Park, D. C., on three months' leave of absence on surgeon's certificate of disability.

Demmer, Charles C., Lieutenant, Medical Corps. Relieved from duty at Fort Thomas, Kentucky, and ordered to Schofield Barracks, H. T., for duty, on transport sailing from San Francisco, Cal., March 5, 1911.

Edwards, George M., Lieutenant, Medical Corps. Will make one visit per week for a period not to exceed two months, beginning December 19th, to New York City, for the purpose of making a special study of eye refraction.

Fife, James D., Captain, Medical Corps. Upon arrival in San Francisco, Cal., will proceed to Fort Slocum, N. Y., for duty.

Heflebower, R. C., Lieutenant, Medical Corps. Relieved from duty at Fort Hamilton, N. Y., and ordered to Army General Hospital, Fort Bayard, N. M., for duty.

Huntington, P. W., Captain, Medical Corps. Orders relieving from duty in the Philippine Islands, revoked.

Kean, Jefferson R., Lieutenant Colonel, Medical Corps. Detailed a member of an Army retiring board to meet at Washington, D. C.

Kelly, John P., Lieutenant, Medical Reserve Corps. Upon arrival at San Francisco, Cal., will proceed to his home; relieved from active duty in the Medical Reserve Corps, to take effect upon the expiration of his leave of absence.

McCord, Donald P., Lieutenant, Medical Reserve Corps. Relieved from duty at Fort Ward, Washington, and ordered to Fort George Wright, Washington, for duty.

Talbot, E. M., Captain, Medical Corps. Left Fort D. A. Russell, Wyoming, on eighteen days' leave of absence.

Weed, Mark D., Lieutenant, Medical Corps. Left Walter Reed General Hospital, Takoma Park, D. C., on ten days' leave of absence.

The following named officers of the medical Corps are detailed to take the course of instruction at the Army Field Service School for Medical Officers, Fort Leavenworth, Kansas, beginning about April 1, 1911: Major Frederick P. Reynolds, Major Powell C. Fauntleroy, Major J. B. Clayton, Major William N. Bispham, Captain James L. Bevans, Captain Henry D. Thomason.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 17, 1910:

Biello, J. A., Assistant Surgeon. Detached from the *Vicksburg* and ordered to duty at the Naval Hospital, Mare Island, California.

Smith, H. L., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered home to await orders.

White, E. C., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the *Vicksburg*.

Woodward, J. S., Passed Assistant Surgeon. Ordered to duty at the Naval Hospital, Mare Island, Cal.

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Births, Marriages, and Deaths.

Married.

Artaud—Ball.—In Key West, Florida, on Wednesday, November 9th, Lieutenant Frank E. Artaud, Medical Reserve Corps, United States Army, and Miss Annie Alderslade Ball.

Posey—Felton.—In Chicago, on Wednesday, December 14th, Dr. William Campbell Posey, of Philadelphia, and Miss Hadassah Felton.

Owen—Vance.—In Lexington, Kentucky, on Thursday, December 8th, Dr. W. B. Owen and Miss Emily Vance.

Died.

Chapin.—In Springfield, Massachusetts, on Thursday, December 15th, Dr. Frederick Wilcox Chapin, aged sixty-one years.

Christian.—In Urbana, Virginia, on Saturday, December 10th, Dr. W. S. Christian, aged seventy-nine years.

Ely.—In Pittsburgh, Pennsylvania, on Tuesday, December 13th, Dr. Francis V. Ely, aged thirty-seven years.

Ferguson.—In Plain City, Ohio, on Sunday, December 11th, Dr. H. L. Ferguson, aged seventy-five years.

Goodfellow.—In Los Angeles, California, on Wednesday, December 7th, Dr. George E. Goodfellow.

Hickman.—In Ocala, Florida, on Friday, December 9th, Dr. Napoleon Hickman, aged seventy-two years.

Holifield.—In Mayfield, Kentucky, on Monday, December 12th, Dr. John R. Holifield, aged seventy-five years.

Hughes.—In Mill Valley, California, on Monday, December 5th, Dr. Jerome A. Hughes, aged fifty-four years.

Hunt.—In Oklahoma City, Oklahoma, on Monday, December 5th, Dr. Myron W. Hunt, aged fifty-three years.

Jones.—In Sauquoit, New York, on Tuesday, December 6th, Dr. George W. Jones, aged forty-one years.

Kroeber.—In Liberty, New York, on Monday, on Monday, December 12th, Dr. Carl H. Kroeber, aged forty-one years.

Proctor.—In Pittsburgh, Pennsylvania, on Wednesday, December 14th, Dr. William M. Proctor, aged thirty-six years.

Roosevelt.—In Denver, Colorado, on Saturday, December 10th, Dr. Giles F. Roosevelt, aged thirty-six years.

Storror.—In Berkeley, California, on Saturday, December 3d, Dr. Edward Storror, aged seventy-three years.

Swander.—In Hampton, Virginia, on Sunday, December 11th, Dr. William H. Swander, aged seventy-five years.

Van Naten.—In Cooperstown, Pennsylvania, on Sunday, December 4th, Dr. R. E. Van Naten, aged seventy years.

Wait.—In St. Louis, Missouri, on Tuesday, December 6th, Dr. Walter J. Wait, aged seventy years.

White.—In Springfield, Illinois, on Saturday, December 10th, Dr. J. F. White, aged fifty-five years.

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Original Communications.

EGGS.

A Study of Eggs Offered for Sale as Pure Food.

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Eggs as food are used in various ways; they are eaten by invalids to a large extent in their raw condition, either whole or the whites alone, mixed with water. They are also employed in the raw state in the preparation of beverages, especially in the summer months.

Besides the ordinary modes of preparing eggs alone as dishes, they enter into a multitude of preparations in cooking, such as cakes, noodles, ice cream cones, etc.

An egg to be eaten in the raw state should be strictly and absolutely fresh, because it is a perishable food, and when kept for some time before using various changes take place. The shell is more or less porous and admits of the passage of bacteria into the egg, so that when we speak of a rotten egg it is due to the action of certain bacteria which have gained access either through a crack or through the egg being in a moist atmosphere or an area of moisture accidentally applied in some way later.

The price of eggs being very high in winter some individuals preserve them in a perfectly legitimate way after buying them cheaply in the early summer, while others resort to methods in which the products do not remain good. Some dealers will buy up questionably fresh eggs, store them, and after a time bring them out of cold storage and offer them for sale as strictly fresh eggs. Others will buy up the questionably fresh eggs, break them, and place the contents in cans and call this an "egg mixture," put them in storage, freeze them, and thus sell them as frozen eggs.

Among the most common methods of legitimate preparation may be mentioned the placing of the eggs in salt solution or lime water; packing in sawdust or bran; coating over with paraffin, petrolatum, or with sodium or potassium silicate. The object in each instance is to keep out air; in other words, to prevent the ingress of bacteria.

By these methods eggs can be kept fresh for several months, but it must be insisted upon *that the eggs, when placed in the solution or packed in bran or sawdust, must be perfectly fresh.*

In large bakeries, where very many eggs are used daily, it is of great moment when eggs are high in price to have plenty to work with, and this question of expense may lead some to unscrupulous methods in baking. Therefore, in some of these large plants, proprietors will sometimes buy up large quantities of egg mixtures and frozen eggs, together with spot or heated eggs in the shell, which bring a very low price when strictly fresh eggs are high.

This may seem far fetched and a matter of rare occurrence, but the fact is that these eggs are trafficked in daily by men who have no regular place of business but are simply peddlers. If one of these peddlers is suspected of selling these mixtures and his wagon is followed or spotted by an employee of the government, when questioned about the eggs he says that "they are not intended for food purposes," yet when seized they were going into one of the largest bakeries of cakes in the city. This special product seized, consisted of five forty quart milk cans, containing a mixture which was of a uniform yellowish color and upon the surface were floating pieces of straw, masses of mould, rat dirt, and what looked like partly cooked whites of eggs. The whole gave off a disagreeable odor and when kept in the ice box for two days had a most offensive smell. On another occasion "cracked eggs" and whole eggs in the same crate were sold as fresh eggs, but when opened they were in all stages of decomposition and known commercially as "rots" and "spots."

It might be well at this juncture to go into the description of the various forms of eggs that are met with among produce men, commission merchants, and professional "candlers."

The industry of hatching chickens for Easter is the time a good many unfertilized eggs are removed from nests and incubators and put on the market as fresh eggs. In other words, eggs which do not hatch are thus marketed and are termed "heated eggs" or "spots."

There are several kinds of "spots." A spot can be referred to as a "fresh spot" because when opened after candling it appears pretty fair, but it will be seen that the white and yolk mix almost immediately or flow out together. (It is impossible to mix the white and yolk of a strictly fresh egg in the shell, no matter how violently it is shaken.)

A "red rot" is an egg which when opened flows out entire and shows a mass of yellowish material, which the candlers call "cheesy" matter. (This cheesy material may represent the degenerated germinal spot.)

A "black rot" is an egg which, when opened, is entirely fluid, runs or sometimes spurts when the

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shell is cracked, contents black in color, gives off a very penetrating, disagreeable odor, and can only be used for fertilizing processes; yet this egg makes up part of the egg mixtures.

A "mouldy" egg is one which has become infected, not necessarily through a crack in the shell, but possibly by a spot or area of moisture from hay; or, packed in crates a cracked egg may run, the cardboard separator becomes moist, an egg sticks to it, and this brings about infection of the egg. These eggs open up perfectly, but there is a very pronounced odor of mouldiness or, what is commonly called, a musty odor. If one of these eggs is placed in a can containing other eggs it would spoil the whole mixture.

A "watery" egg is one which has a more watery white than usual, is eatable but spoils very rapidly, when it is known as a "watery rot."

A "check" (or blind check) is one in which is the slightest, almost unnoticeable crack from a slight injury, and a professional candler while handling the eggs can detect these checks by a peculiar sound which is produced when they are slightly jarred one against the other.

A "cracked egg" is one where a visible crack or cracks are noticeable; while a "leaker" is one where the whites or whites and yolks are escaping from cracks. These cracked eggs are all fit for food purposes but must be used as soon as possible because of the danger of infection from the air.

A "grass" egg is one where the yolk shows up very perceptibly in candling, even though fresh. This egg, I believe, is received mostly from Delaware and is hard to distinguish from a "spot egg."

There are dealers who buy up these fresh cracked eggs, separate the whites from the yolks, put them in cans, and sell them to hotels and first class bakeries. Sometimes the whole egg is sold in this way. These separated or whole products are sold by the pound.

The various forms of spots and rots can all be detected by candling, as there is the greatest difference in the appearance of a perfectly fresh egg and one which is a "spot" or "rot" or a "mouldy" egg.

A perfectly fresh egg gives a uniform pinkish color when held against a light in a darkened box or room, and the yolk is hardly discernible except in the grass egg. In the spot and rot eggs, the outer or fluid albuminous layer is more evident and appears like water; in other eggs there appears a cloud or spot which may be at any portion of the egg. In the mouldy egg the egg is not quite so transparent as the strictly fresh egg and in the black rot the egg appears opaque in areas or its entirety.

The spot eggs are disposed of by scrupulous and honest dealers for manufacturing purposes, principally the tanning of leather, and labelled "not for food purposes." Dried or desiccated eggs are put upon the market in three forms: "Whites," "yolks," and "whole egg." The "white" is the most expensive and sometimes brings as high as eighty cents a pound. The whole dried egg is in a granulated form and by simply mixing the preparation with water (three to one) and leaving stand aside to dissolve the manufacturers assert that it is just as good as fresh eggs. *It takes four dozen eggs to make one pound of dried egg, and as the product sells for twenty-five cents a pound when fresh eggs are bringing from thirty-six cents to forty-eight cents a dozen, one can readily draw his own conclusions as to the quality of dried eggs on the whole.*

A number of these preparations upon the market designated desiccated eggs contain no egg at all, only corn starch or powdered tapioca, colored with some anilin or coal tar dye.

A preparation which was labelled and put upon the market as "whip easy" and purporting to contain eggs was found to contain, upon chemical analysis by Professor Lawall, saponin, the active principle of soap bark. No wonder it whipped easy!

A preparation called Russian egg albumin and another called albumin from duck eggs come in the dried state in small, almost transparent masses and of a light yellowish brown color. These albumins bring between sixty and seventy cents a pound and are thoroughly soluble in water. Examinations made of two samples of Russian egg albumin, taking a gramme and diluting with 100 c.c. of sterile water and using 0.001 c.c. to an agar plate, gave 10,000, and the other 12,000 colonies to a cubic centimetre. Inoculation of the solution into guinea-pigs did not produce any effects at all. It is stated that the duck egg albumin, which is obtained from China and Russia, gives off an appreciable odor and is not so widely used as the Russian albumin.

Two crates of what were called fresh cracked eggs were bought on two different occasions, and in each case maggots were very abundant, besides numerous rots and spots among the few good cracked eggs.

About eighteen months ago Mr. Cassidy, the agent of the Pure Food Commission, State of Pennsylvania, heard of several people (among them doctors) complaining that after eating cake they or members of their families were taken ill, with symptoms of disturbances of digestion, suggesting a poison. Mr. Cassidy turned the sample of cake over to Professor Lawall who, examining for coal tar products, was unable to detect any. Several more complaints and samples of cake were received and the chemist made the same report, negative for anilin and coal tar products. Mr. Cassidy then went to the bakery where the cake was made and after conversing with the bakers found that in the baking they were using an egg mixture. This product, to the agent, did not appear good, and from its cheapness he suspected that it was made up of stale and bad eggs. Upon close examination this was found to be true. After close surveillance for several days a wagon (bearing no dealer's name) drove up to the bakery and an attempt was made to deliver the five cans (forty quart milk cans) of egg mixture, which was described previously in this paper. The mixture was examined immediately and, apart from the repulsive appearance of the mass and the disagreeable, musty odor, numerous streptococci and bacteria of putrefaction were found by culture.

In several other seizures of like mixtures, some put up in wooden buckets and some in small tin cans, the peddlers in every instance insisted they were not for food purposes, yet the mixture was invariably seized as it was in the baker's possession or as it was being delivered to a bakery. In one lot, besides the filth already mentioned, there were several embryo chicks about seven days old, and the eyes of other chicks about the same age. What happens when these mixtures are used, is simply to scoop out the dirt and chicks, and use the mixture as fresh eggs. It stands to reason that if the eggs are spoiling or in a putrefactive condition when placed in the cans and offered for sale the products of putrefaction would be injurious to persons partaking of food prepared in various ways from these eggs.

In a perfectly fresh egg the number of bacteria is extremely small, and personally I believe it to be free from bacteria. I have frequently made spreads from strictly fresh eggs and have never been able to detect bacteria, and even my inoculations into culture media mostly fail to show any bacterial growths. Occasionally, in plates made upon agar, after several days a few mould fungi will develop, but these may be from the air.

From the "spot," "mouldy," "dried," and "rot" eggs numerous and various bacteria as well as mould fungi have been encountered.

Almost constantly there are present streptococci and various forms of putrefactive organisms, as *Bacillus coli, Proteus vulgaris*, bacilli corresponding to the typhocolon type of organisms and resembling morphologically and biologically the paratyphoid organisms, micrococci, *Bacillus prodigiosus,* and a large bacillus resembling the *Bacillus botulinus.* (The characters of the latter organism are: A large bacillus, from 2 to 6 μ long and 1 μ in thickness, rounded ends, occurring in short filaments and groups; spore formation; sluggishly motile; Gram positive; and only developed in an anaerobic atmosphere.)

In bacteriological studies of egg mixtures and dried eggs practically the same organisms were encountered and when several guineapigs were inoculated with small quantities of the suspension in water death resulted in a very short time. For instance, in one case there were several (three or four) granules of the dried egg adhering to the bottle in which it was received. To this was added 10 c.c. of bouillon and incubated for twenty-four hours at body temperature. Three cubic centimetres of this was inoculated subcutaneously into a guineapig at 10 o'clock a. m., and at 4:25 p. m. of the same day the animal was found dead in its cage.

Another guineapig inoculated subcutaneously at 1 p. m. with the same amount of a similar mixture made in a sterile bottle died at 7 p. m. of the same day. A third guinea pig inoculated with 1 c.c. of a twenty-four hour old bouillon culture subcutaneously died in three hours. All of these animals showed great weakness after inoculation and an apparent paralysis of both hind extremities. At the site of inoculation congestion was noticed as well as along the abdominal wall and thorax. Another animal showed congestion of intestines; and the third animal showed congestion of one limb of the uterus. A drop culture was made of the blood, and the large, thick bacillus, as described before, was found in each case, besides a smaller bacillus and a few micrococci.

A fourth guineapig was inoculated with three drops of blood from animal No. iii, just described. The animal was inoculated subcutaneously at 5:30 p. m. and died the next morning at 10:45. At autopsy marked injection at site of inoculation and along musculature of abdomen and thorax, and areas of coagulation necrosis were present in the liver. An examination of the blood showed the same large thick bacillus which resembled the *Bacillus botulinus.*

Inoculations were made from the heart's blood and incubated for twenty-four hours, and the subsequent growth exposed to 60° C. for twenty-five minutes. Inoculations of 2 c.c. of this heated culture subcutaneously into guineapigs failed to produce any deleterious effect up to seven days. A second experiment was undertaken, consisting of taking 3 grammes of dried egg with 9 c.c. sterile distilled water, leaving it stand for two and a half hours until it was thoroughly dissolved. Two cubic centimetres of this mixture was inoculated into one guineapig intraperitoneally and the same amount subcutaneously into another guineapig. In five days the guineapig which was inoculated intraperitoneally died, while the other guineapig was sick for several days, but eventually recovered.

This shows that the bacteria were numerous enough for harmful effects without cultivating in the incubator. Just to see how many bacteria were approximately contained in 1 c.c. I took a gramme of the mixture and added to 100 c.c. of sterile distilled water. Taking 0.001 c.c. of this mixture a plate was made, using agar and keeping at room temperature. A second plate was made, using 0.01 c.c. and putting this in the refrigerator. The colonies resulting at room temperature in twenty-four hours, using 0.001 c.c. numbered 910,000, some of which were gas producers, while in the refrigerator the plate containing 0.01 c.c. showed uncountable colonies in twenty-four hours! Agar plates were made, using fresh eggs as controls, and neither in the refrigerator nor at room temperature did any colonies develop. Another preparation of dried egg resembling the first specimen in appearance was also plated, using 0.002 c.c. of the suspension, and in twenty-four hours there developed at room temperature approximately 4,000,000 colonies. The bacteria were similar to those found in the other dried preparation.

A can containing twenty-nine pounds of frozen eggs (mixture of "spots" and "rots") was seized, and after it was perfectly thawed 0.5 c.c. was inoculated subcutaneously into two guineapigs. Both animals died within eighteen hours; one showed great congestion at point of inoculation while the other did not. In the heart's blood of both animals the same large, thick, Gram positive bacillus was found.

Taking 0.005 c.c. of this mixture and plating upon agar there developed at ordinary room temperature over 10,000,000 colonies. These bacteria were mostly of the putrefactive type and streptococci.

In the examination of a "rot," "spot," and "mouldy" egg, regarding the number of bacteria present, an egg of each kind was placed in 100 c.c. of sterile distilled water, and 0.1 c.c. of this mixture was plated upon agar and kept at ordinary room temperature. In twenty-four hours there developed upon the rot egg plate 600 colonies; the spot egg plate 170 colonies; and upon the plate made from the mouldy egg 1,300 colonies. These plates were made anaerobically, and even after standing for several days at ordinary room temperature and in an aerobic state no further development of colonies took place except moulds.

Regarding the keeping qualities of these spot eggs, when opened, placed in a clean receptacle, and then put in the refrigerator, deterioration takes place in at least forty-eight hours, whereas, strictly fresh eggs under the same conditions will keep for nearly a week.

REMARKS.

It can be seen at a glance, that if the so called heated or spot eggs contain putrefactive bacteria and if kept in a mixture for some time before disposing of them, that poisonous products are generated which may cause symptoms of gastroenteritis and simulate very closely cases of meat poisoning. It is sometimes said by patients who are on a diet of raw eggs that they cannot eat them, that they make them sick or cause diarrhœa or other symptoms of gastroenteritis. It can easily be explained if the patients have eaten these spot eggs. Take a patient with tuberculosis who is recommended to eat so many raw eggs a day. If he is too sick to wait upon himself someone might make up a milk punch containing spot eggs and mild or severe gastroenteritis develop. Or in the making of dressings where great heat is not required, the making of corn starch, of various puddings, or even in baking cakes, these spot eggs may have been used and perhaps bring about gastroenteritis in those who eat thereof.

Another food product recently brought before the pure food commissions is the common ice cream cone which, when hundreds of these were seized, were found to have been made of rot and spot eggs preserved with boric acid. These could easily be the cause of gastroenteritis, especially in children, among whom they are very largely sold.

If one half cubic centimetre (eight minims) of an egg mixture offered for sale as fit for food purposes will kill a guineapig in eight hours, one wholly unacquainted with bacteria or their products will readily see that a potent poison is contained in the eggs and that they are absolutely unfit for food.

Finally, it is my opinion that the most rapid and efficient method of determining strictly fresh eggs is by the candling process, but by an expert. Some eggs that are put on sale as fresh eggs open up apparently fresh, yet when the dish is slightly jarred the admixture of white and yolk is easily accomplished, which, with a perfectly fresh egg is only accomplished after severe beating. The spot eggs do not uniformly give off an odor, but a mouldy egg does, as well as a black rot or an ordinary rotten egg.

Take a fresh egg and shake it vigorously for an indefinite time; no admixture of yolk and white is possible in the shell, and everyone knows how impossible it is to mix these two portions in a dish without vigorous beating.

To prevent the selling of spot and rot eggs as well as mixtures of these forms of eggs, either frozen or not, it seems that the law should compel the dealers to immediately dispose of them to the manufacturing concerns individually and not leave them for some unscrupulous trafficker or peddler who collects these rotten eggs for personal gain, obtaining them from dealers for almost nothing and disposing of them to small bakeries at from eighteen cents to twenty cents a pound when fresh eggs are bringing from thirty-six cents to forty-eight cents a dozen! These men have no regular place of business, they simply hover around the wholesale places like vultures and pounce upon and remove to their cellars or kitchens the spoiled eggs, then hire a push cart or wheelbarrow, or even a wagon, and deliver to the equally guilty concerns who buy them, who must know that they are not getting perfectly fresh eggs.

When two grades of eggs are offered for sale at a "dairy" or store, it is almost a foregone conclusion that the cheaper ones contain "spots" or "heated eggs."

For the great help extended in collecting both information and various forms of eggs I wish to give my sincere thanks to Mr. Harry P. Cassidy.

2330 NORTH THIRTEENTH STREET.

THE WASSERMANN REACTION AND "606."

By Thomas Mac Rae, M. D.,
New York.

This is intended merely as a preliminary report on my results with the Wassermann reaction following the administration of the Ehrlich-Hata remedy, "606," and is prompted by numerous inquiries. A more extensive report is in course of preparation and will be published as soon as sufficient time has elapsed for more definite conclusions to be formulated, with a bibliography as complete as I shall be able to collect. Those using and reporting on the action of "606" have usually followed their cases with the Wassermann reaction; a list, therefore, of the published reactions, is, practically, one of those using "606," a number limited, apparently, so far, only by reason of inability to secure the drug, so great is the desire to test it.

There exists in the literature such a discrepancy on the results obtained in the serum reaction that no satisfactory deductions can be made. Many cases have remained strongly positive for weeks even when the clinical effect is obtained. From the work of Schwartz and Fleming and others arsenobenzol does not affect the chemistry of the reaction, but is indifferent, neither hastening nor retarding hæmolysis. Hügel ventures the opinion that a negative reaction becomes positive quicker than after mercurial treatment. Wechselmann reports a negative result in the majority of his cases in from one to seven weeks, mostly, however, after four weeks. Schreiber and Hoppe found eighty-four per cent. of their cases negative after fifty days; this was increased to 92.3 per cent. after longer observation. One case became negative as early as forty hours, another four days, and still another after six; the majority, however, after fourteen days. In one case seventy days elapsed before a change took place.

In Isaac's twenty-seven cases, although there was regression of symptoms, all remained positive except two, one of which became negative after six weeks. Neisser's results were forty-four per cent. negative with the Wassermann method and 19.2 per cent. with Stern's modification, the average time being between twenty and thirty days. Jéronne gives sixty per cent. negative; Treupel's cases became negative in from seven to sixty days. Glück reports one third of his cases negative after from thirty-five to forty days; Iversen in from twenty to forty days, two as early as the eighth and tenth day; Michaelis from two to ten weeks. Herxheimer's results were as follows: Twenty-one chancres; three positive before treatment; of these two became negative after seven and twenty days respectively. Four negative before treatment became positive four, six, nine, and twenty-eight days after injection. Secondary lues; thirty became negative after treatment five in from one to two weeks; of these four became positive after from one to one and a half weeks. Sixteen remained positive; four which had been negative before treatment remained so; of seven latent cases with positive reaction, three became negative in from eight to fourteen days.[1]

Kren's results show the Wassermann reaction negative in from four to five weeks. Of his cases two became negative after one week, two after two weeks, two after three weeks; two cases negative after six weeks, one after seven weeks; and three remain positive after eight weeks. Seventy-eight of his cases were treated with neutral emulsion, forty-five with slightly acid emulsion. He had four initial lesions with positive Wassermann; three without secondaries, one with slight secondaries. All four became negative in one to two weeks.

In a recent report Gennerich concludes that patients treated a short time before "606" with mercury react quicker and more favorably, both clinically and serologically. He advises that if the cases are clinically and serologically active after three weeks to repeat the dose, and says that if the reaction persists after three weeks the spirochætæ probably are not destroyed. He has treated over eighty cases, in all of which, except three, the Wassermann reaction has remained negative.

The method of administration of the "606" employed in the beginning on the cases of the present report was the original Alt (Cases I to XIII). In a few cases methyl alcohol was added as suggested by Ehrlich. Later the Wechselmann subcutaneous neutral suspension method was used (Cases XIV-XXX). Then the alkaline method, practically the original Alt modified by Lesser (Cases XXXI-LIV). The method lately suggested by Ehrlich of intravenous injection followed in forty-eight hours by intramuscular was not used.

The Wassermann reaction, strictly, with two alcoholic antigens is here reported throughout the series. A consistent effort is constantly made in the laboratory to have all controllable conditions at all times similar: Reagents, dilutions, pipetting, centrifuging, incubations, etc. Routinely there is a daily standardization of reagents (except antigens, which are titrated frequently) and with each specimen two antigens are used, one a pure lipoid from guinea pig liver and heart, the other an alcoholic extract of congenital luetic liver. Reactions are reported only after having stood twelve hours on ice.

CASES.

The figures in parentheses following the case numbers indicate the previously published case numbers.

FIRST SERIES. REPORTED BY NICHOLS AND FORDYCE IN *Journal of the American Medical Association*, OCTOBER 1, 1910.

The Wassermann reactions here given have not been previously reported.

CASE I. (2) Male, æt. thirty-eight; secondary syphilis, primary, 1905; secondary, 1905; present lesion large serpiginous syphilide of back and chest. Treatment irregular; mixed for one week in City Hospital; 0.3 gramme "606," May 10, 1910. Wassermann reaction, May 4th, ++, May 16th, ++, June 10th, ++.

CASE II. (4) Male, æt. thirty-three; secondary syphilis; primary, February, 1907; secondary, March, 1907. Present lesion, scaling syphilide of palm began one and a half years ago. Treatment: More or less constant for three years; liquid, capsules, tablets (with occasional syphilides). 0.3 gramme "606," May 16, 1910. Practically healed in three weeks. Wassermann reaction, May 16th, ++, June 2d, ++; great improvement in seven days, completely healed in thirty. Recurrence in July; Wassermann reaction, October 23d, ++, December 4th, ++.

CASE III. (6) Male, æt. thirty-four; tertiary syphilis; primary, October, 1909; secondary, December, 1909; severe rupial lesions on face, arms, head, and left leg; treatment, mercury pills since infection; 0.3 gramme "606," May 6, 1910. Marked rapid and progressive improvement; lesion healed in twenty-nine days, with a gain of twelve pounds. Wassermann reaction, May 20th, ++, June 2d, ++, November 30th, 1910, weak + (November 30, 1910, had regained normal weight, 142 pounds, felt better than ever before. Said that he had no bad effects.)

CASE IV. (12) Male, æt. twenty-two; primary syphilis, primary lesion, April, 1910. (Three large indurated chancres on the lips.) Secondary, May, 1910. (Erythematous papular eruption on body.) Treatment, 2 grains of mercury salicylate hypodermically; 0.3 gramme "606," June 10, 1910. Twenty-one days, chancres gone, eruption very faint. Wassermann reaction, June 2d, ++, October 23d, negative. No other treatment, no other symptoms.

CASE V. (5) Female, æt. twenty; secondary syphilis, condylomata; primary (?), secondary, 1910; pregnant six months, faint eruption. Treatment, 4 grains mercury salicylate; 0.3 gramme "606," May 19, 1910. Apparently well in twenty-one days; Wassermann reaction, April 18th, ++, May 20th, ++, June 2d, +.

CASE VI. (11) Male, æt. twenty-eight; secondary syphilis; primary, January, 1910; secondary, May, 1910; condylomata, macular eruption, and mucous patches. Treatment, none until June 2, 1910; 0.3 gramme "606." Face and legs clear in seven days. Wassermann reaction, May 26th, ++, June 6th, ++, September 22d, ++ (recurrence after one month). September 17th, had large moist lesion on scrotum and thighs, mucous patches on lips and soft palate (drinking heavily). Second injection; healed recurrent lesions on scrotum and thighs, those of throat persisting.

CASE VII. (1) Male, æt. twenty-five, secondary syphilis; primary, January, 1910; secondary, February, 1910; generalized papular eruption, general adenopathy. Treatment, eleven injections of mercury salicylate, one grain. 0.3 gramme "606," May 10, 1910. Wassermann reaction, April 24th, ++, May 16th, +, June 6th, +. (No improvement in four weeks.)

CASE VIII. (9) Male æt. twenty-eight, secondary syphilis; primary, May, 1909; secondary, September, 1909; severe pustular, nodular and ulcerated syphilides on face, shoulders, and back. Treatment, very little; 0.3 gramme "606," May 26, 1910. Marked improvement, lesions dry and faint in fourteen days. Wassermann reaction, May 28th, ++, June 2d, ++.

CASE IX. (3) Male, æt. twenty-one; secondary syphilis, primary, March, 1910; secondary, May, 1910. Circinate syphilides on face, macular eruption of trunk, adenopathy. Treatment local only. 0.3 gramme "606," May 6, 1910. Wassermann reaction, May 16th, ++, May 23d, +.

CASE X. (7) Male, æt. fifty-four, tertiary syphilis. Primary, 1882; secondary, 1882; ulcerating gummata knee and leg. Treatment ten days in 1882, mixed for three days in hospital. 0.3 gramme "606," May 23, 1910. Much improved. Wassermann reaction, May 26th, ++, June 2d, ++.

CASE XI. (10) Male, æt. twenty-four, tertiary syphilis, primary, 1907; secondary, 1907; periostitis in right tibia above ankle began six months ago. Treatment, mercury for four or five months, potassium iodide seven months. 0.3 gramme "606," June 10, 1910. Wassermann reaction, May 20th, ++, June 11th, +.

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[1] Fordyce, *New York Medical Journal*, November 12, 1910.

Case XII. (13) Male, æt. thirty-nine, tertiary syphilis; primary, 1905; secondary, 1905. Arthritis of knee, broken down glands of groin, emaciation, anæmia. Treatment: Four weeks in hospital in 1906, eight weeks in hospital in 1905. 0.3 gramme "606" June 7, 1910. Wassermann reaction, June 10th, ++; June 28th, +.

Case XIII. (14) Female, æt. twenty, secondary syphilis; primary, May, 1910; secondary, June, 1910. Labial sore, mucous patches, generalized eruption, adenopathy. Treatment: No mercury. 0.3 gramme "606" June 7, 1910. Lesions healed in two weeks. Wassermann reaction, June 3, 1910, ++.

Second Series. Reported by Fordyce in the *New York Medical Journal,* November 5 and 12, 1910.

Case XIV. (3) Male, æt. forty-two, tabes; primary, 1890; secondary, 1890. Tabetic symptoms began 1907. September 21, 1910, typical tabetic, unable to walk unless supported. Treatment: Insufficient first year; during past year, forty injections enesol, chromium sulphate. 0.5 gramme "606" September 29, 1910. Wassermann reaction, September 21st, ±; September 23d, +; October 18th, —.

Case XV. (12) Male, æt. twenty-eight; secondary syphilis, latent; primary, 1901; secondary, 1901. Treatment: Constant with mercury and potassium iodide. 0.5 gramme "606" October 6, 1910. Wassermann reaction, October 3d, v. w. +; October 23d, —.

Case XVI. (1) Male, æt. twenty-nine; precocious malignant syphilis; primary, March, 1909; six weeks later ulcer of the throat destroying uvula. September 9th, gummatous bursitis, (patella) periostitis (sacroiliac joint); ulcer bridge of nose, extreme cachexia, pronounced tachycardia; albuminuria. Treatment: Mercury, injections, internally; inunctions, potassium iodide. 0.4 gramme "606" September 15, 1910. Gained thirteen pounds by October 15th. Wassermann reaction, September 15th, ++; October 9th, ++; October 22d, ++ (but with slight tinging supernatant fluid). Relapse October 22d, periostitis right malleolus, back of left hand, left forearm. After second injection continued to improve clinically. Wassermann reaction remained ++.

Case XVII. (13) Male, æt. sixty-three, secondary syphilis; primary, 1908, tonsil; secondary, 1908. Middle ear trouble and iritis, three months after. Second attack of iritis ten months later. October 1, 1910, relapsing papular eruption, trunk, face, scalp, shoulders, arms, wrists and palms. Treatment: Mercurial, amount not known. 0.5 gramme "606" October 12, 1910. Wassermann reaction, October 1st, ++. Marked improvement.

Case XVIII. (30) Male. Primary, 1904; secondary, 1904. Syphilitic endarteritis of the base of brain, involving both pyramidal tracts and sympathetic. August, 1908, nervous symptoms, weakness right leg, speech disturbance, pupils unequal. February, 1910, partial paralysis right leg, Babinski ankle, and knee clonus, speech disturbance, pupils very nearly Argyll Robertson. June, 1910, loss of consciousness on several occasions, facial paralysis. July, 1910, similar attack. Treatment: First two years, pills. After attack in 1908 pills and potassium iodide; after attack in February, 1910, vigorous mercurial and iodide medication; after attack in July, forty-three injections of enesol. Twenty inunctions 3 grammes mercury compound daily. 0.45 grammes "606" August 31st; 0.5 grammes October 16th. Marked improvement after the first injection continuing for ten days, then apparently ceasing; second injection followed by renewed improvement, which continues. Wassermann reaction, August 31st, +; September 19th, +; October 10th, +; October 23d, — (few cells).

Case XIX. (29) Male. Optic neuritis; primary, fifteen or twenty years ago; no secondaries (?) Ocular trouble began 1907; since April, 1910, rapidly progressing. Treatment: Active mercurial from onset of eye symptoms to August, 1910. No mercury since. 0.45 gramme of "606" August 19th, 1910. Wassermann reaction, November, 1909, —; February, 1910, —; April, 1910, — (Dr. Swift); October 26th, 1910, ++ (patient now totally blind).

Case XX. Male, æt. twenty-one; primary syphilis; primary, October, 1910; no secondary rash. Typical initial lesion now present with inguinal adenopathy, exposure September 21, 1910. Treatment: No mercury. 0.6 gramme "606" October 24, 1910. Wassermann reaction, October 24, 1910. ±; November 23d, +. No secondary has developed.

Case XXI. Male, æt. forty-four; iridochoroiditis right eye, nodular syphilides; primary, 1899; secondary, 1899. Iridochoroiditis right eye, 1909; tubercular syphilides of the leg, June, 1910. Treatment: Internal and injections for about two years, following primary lesion. None for nine years. 0.6 gramme "606" October 22, 1910. Improvement in skin and eye condition very marked. Wassermann reaction, October 22, 1910, ++; November 4th, ++; December 3d, ++.

Case XXII. Male, æt. twenty-four; secondary syphilis, latent; primary, March, 1910; secondary, April, 1910. Treatment: Active; injections mercury salicylate, from April 25 to September, 1910. 0.6 gramme "606" October 6, 1910. Wassermann reaction, April 25, 1910, +; June 16th, ++; August 31st, weak +; September 2d, +; October 6th, weak +; October 12th, ±; November 5th, —.

Case XXIII. Male, æt. thirty-five; primary, July, 1910; initial lesion index finger with secondary eruption, adenopathy; malignant infection ten weeks old. Treatment: No mercury. 0.6 gramme "606" October 8, 1910. October 28, 1910, chancre healed, rash gone, gaining weight. Wassermann reaction, October 9, 1910, ++; December 11th, +; November 28, 1910, left optic neuritis developed, was totally blind for several days, is now improving.

Case XXIV. (11) Male, æt. forty-three; secondary syphilis; primary, July 15, 1910; secondary, September, 1910. Initial lesion, thumb, and generalized maculopapular eruption, syphilitic pharyngitis, weight loss sixteen pounds. Treatment: Seven injections, mercury salicylate; last one October 7th. 0.5 gramme "606" October 10, 1910. Improvement in two days; in seven days eruption almost gone, general condition much improved, gaining weight. Wassermann reaction, October 8th, ++; October 15th, ++.

Case XXV. (4) Male, æt. thirty-seven; secondary syphilis, latent; primary, November, 1908; secondary, December, 1908. Treatment: Internally and by inunction from September, 1908, to September, 1909. August, 1910, inunctions for one month. 0.4 gramme "606" September 14, 1910. October 8, 1910, had gained five pounds. Wassermann reaction, September 14th, ++; October 8th, +.

Case XXVI. (5) Male, æt. twenty-two; primary, 1907; secondary, 1907 . July, 1910, meningomyelitis involving lateral tracts (Dr. Haskell, of Bridgeport). Treatment: Following infection inunctions and intramuscular injections to March, 1910. Forty to fifty injections of soluble salt in July. Mercury and potassium iodide. 0.5 gramme of "606" September 23, 1910. Wassermann reaction, September 16th, +; October 5th, ±; November 10th, —.

Case XXVII. (6) Male, æt. twenty-five, tertiary syphilis; primary, 1900; secondary, 1900; April, 1910, tertiary. September, 1910, ulcerated lesions of septum and tip of nose. Treatment: First six months mercury internally; April, 1910, mixed treatment. 0.6 gramme "606" September 24, 1910. One week later lesions completely healed. Wassermann reaction, September 24th, —; September 29th, ++; December 9th, weak +.

Case XXVIII. (15) Female, æt. thirty-six; tertiary syphilis. Chancre on lip, thirteen and one half years ago (infection from dentist). Secondary, two months later with miscarriage at seven months. Tertiary; numerous gummata of skin. Gummatous infiltration of leg for six years, with pseudoelephantiasis of lower third leg and foot; gummata on knee and nose. Treatment: Irregular and inefficient for years. 0.5 gramme "606" October 12, 1910. Highly satisfactory clinical results. Wassermann reaction October 16th, ++; October 22nd, ++; October 30th, ++; November 2nd, ++; November 15th, ++.

Case XXIX. (7) Male, æt. thirty-five; tertiary syphilis; primary, November, 1907, finger; secondary six months later; relapses since. June, 1910, nephritis. September, 1910, gumma on leg. Ulcerating nodular lesion on nose, decided cachexia. Treatment: Active and constant since infection. 0.5 gramme "606", September 28, 1910. Ten days later patient was gaining weight, appetite good, lesions healed. Albumin and casts have disappeared from urine. Wassermann reaction September 27th, ++; September 29th, ++; October 5th, ++; October 10th, + (Dr. Engman); October 19th, weak, + (Dr. Marshildon); October 23rd, — (Dr. Marchildon).

CASE XXX. (2) Male, æt. thirty-six; double optic neuritis: incipient tabes; primary, 1902 or 1903, finger; secondaries overlooked. August, 1909, impairment of vision. March, 1910, optic neuritis diagnosticated, and antisyphilitic treatment first begun. July 19th, patient had gray atrophy, both optic nerves, pronounced disseminated chorioretinitis, luetic type (Dr. Casey A. Wood, Chicago). Treatment: First in March, 1910, ten inunctions, then mercury salicylate ½ grain three times a week; then succinamide. After July 15th enesol intravenously. 0.4 gramme "606" September 14, 1910. 0.5 gramme "606" October 7, 1910. Sight now no better. Atrophy probably slightly progressive. Wassermann reaction, March 10th, + (Dr. Gehraman); September 19th, ++; October 5th, ++ (some decrease in intensity); October 27th, ++ (Dr. Harris, Chicago); November 4th, ++, with slight tinging supernatant fluid; December 2d, ++ (Dr. Harris).

THIRD SERIES. CASES NOT PREVIOUSLY REPORTED.

CASE XXXI. Male, æt. twenty-seven. Secondary syphilis latent. Chancre on lip in December, 1909; sore throat two months after; no eruption (?). At present no symptoms. Treatment: Twelve injections mercury salicylate, then protiodide pills six daily for nine months. 0.6 gramme "606" November 10, 1910. Wassermann reaction, November 10, 1910, +; November 16th, — (negative in six days).

CASE XXXII. Male, æt. thirty-five. Primary, October 12, 1910. Erosions, November 13, 1910, with lymph node enlargement. At present macular eruption. Treatment: Only local iodoform. 0.55 gramme "606", November 17, 1910. Wassermann reaction, November 17th, ++; November 25th, ++.

CASE XXXIII. Male, æt. twenty-seven. Secondary syphilis, early; primary, September 6, 1910. Marked mucous patches on tongue since November 1, 1910. Treatment: Mercury protiodide 1-3 grain, three times daily since September 11, 1910. 0.6 gramme "606" November 23, 1910. Marked improvement clinically. Wassermann reaction, November 23rd, ++; December 1st, ++ (with very slight tinging supernatant fluid).

CASE XXXIV. Male, æt. thirty-two. Luetic optic atrophy, acute; primary, 1909; secondaries, 1910. Mucous patches and eye lesions. Treatment: Injections every other day for nine months of mercury bichloride. 0.6 gramme "606" November 23, 1910. Marked improvement, mucous membrane lesions healed, eye condition much better. Wassermann reaction, November 23rd, ++.

CASE XXXV. Male, æt. twenty-seven. Cerebral syphilis. Primary, 1906; secondaries, 1906. 0.6 gramme "606" November 14, 1910. Wassermann reaction, November 15th, —.

CASE XXXVI. Female, æt. twenty-three. Congenital syphilis; interstitial keratitis, right eye, from seven years of age.. Three attacks since; Hutchinson teeth; several attacks of deafness in 1900; remained deaf for one year; hearing at present impaired; scars from gummata leg (1897) and of wrist (1900). Treatment: Only of recent years, and intermittent. 0.5 gramme "606" October 31, 1910. Some improvement. Wassermann reaction, September 8, 1910, ++; November 30th, ++. Wassermann reaction of father (perforated septum), +; of mother (several abortions and miscarriages), —; of twelve year old brother, —. None had "606."

CASE XXXVII. Female, æt. twenty-seven. Secondary syphilis; primary, July, 1910; secondary, six weeks later. Treatment: Mercury for two or three weeks. 0.6 gramme "606" October 29, 1910. Wassermann reaction, October 27th, +; November 11th, ++; November 14th, —.

CASE XXXVIII. Male, æt. twenty-nine; chancre with secondaries: primary upper lip six weeks (lymph nodes below jaw enlarged); secondary, large scattered papules on body. Treatment: No mercury. 0.6 gramme "606," October 29, 1910. Wassermann reaction October 28th, ++, November 16th, ++ (with slight tinging supernatant fluid), December 1st, ++; lesions healed, November 16, 1910, ++.

CASE XXXIX Male, æt. twenty-four; secondary syphilis; tonsillar infection September, 1910; present generalized erythematous syphilides with scattered papular lesions. Treatment: No mercury. 0.5 gramme "606," November 10, 1910; marked improvement. Wassermann reaction November 17th, ++, with slight tinging of supernatant fluid.

CASE XL. Male, æt. twenty-four; secondary syphilis; mixed chancre, June, 1910; mucous patches mouth and throat latter part of July. Mass of enlarged lymph nodes under angle of jaw; mucous patches on tongue, throat, foreskin. Treatment: Unknown (South America). 0.55 gramme "606," November 17, 1910; marked improvement, mass of glands disappearing, patient gaining weight. Wassermann reaction November 16th, ++, with tinging supernatant fluid; December 6th, ++.

CASE XLI. Male, æt. fifty-two; chancre 1906 followed by secondary. Present condition: Under surface and dorsum tip of tongue superficial lesions of one month's duration. Treatment: Two years injection of mercury salicylate and bichloride. 0.5 gramme "606," November 2, 1910. Wassermann reaction April, 1910, said to have been negative; October 22nd, ±, very few cells unhæmolyzed, practically negative; November 19, ±.

CASE XLII. Female, æt. forty-two; date of infection not determined. Married twenty-two years. Husband tabetic sixteen to seventeen years ago. At present she had periostitis third rib near sternum and on tibia, generalized pain over body. Urine showed traces of albumin and casts; systolic murmur. Treatment: Undetermined. 0.5 gramme "606," November 9, 1910. Wassermann reaction two years ago said to have been negative; one and one half years ago (1909) +; October 24th, ±; November 17th —; December 12th, 1910, —.

CASE XLIII. Male; æt. twenty-four; early secondary syphilis; primary, May, 1910. Mucous patches for a few days. Treatment: Protiodide ⅕ grain for six months with saturated solution of potassium iodide, twenty drops, three times a day. 0.6 gramme "606," November 29, 1910. Wassermann reaction November 29th, ++; December 4th, ++.

CASE XLIV. Male, æt. thirty-five; general paralysis; primary syphilis, 1896; secondary, 1897. Treatment: Prolonged mercurial by injections and inunctions; discontinued one year ago. 0.6 gramme "606," October 22, 1910. Not improved. Wassermann reaction October 15, 1910, ±.

CASE XLV. Male, æt. forty-two; secondary syphilis; primary, thumb, November 15, 1909; secondary, February 11, 1910. Treatment: Protiodide since infection (six hundred pills). 0.6 gramme "606," November, 1910. Patient (physician) thought infection from dissecting injected cadaver fifth day after death. Wassermann reaction October 25, 1910, + (numerous spirochætæ in mouth lesion). Twenty-four hours after "606" none were found. Reaction intensified (Dr. Swift).

CASE XLVI. Male, æt. thirty-four; Primary, 1903 or 1904. Mucous membrane lesions. Treatment: Inunctions, internal medication with protiodide pills for six months following infection, then none for about one year when mucous patches appeared in the mouth. Treatment from this time on for about two years. March, 1909, had curious sensations in back of head. Patient took mixed treatment up to November, 1910. 0.6 gramme "606," November 23, 1910. Wassermann reaction April, 1910, + (Dr. Swift); October 16th, +; November 30th, ++ (slight tinging supernatant fluid).

CASE XLVII. Male, æt. twenty-four: primary syphilis with secondary eruption; primary sore on index finger. Treatment: No mercury. 0.6 gramme "606," November 28, 1910. Wassermann reaction December 1st, ++; December 7th, ++.

CASE XLVIII. Male; secondary syphilis, latent; primary, 1903; secondary, 1903; latent. Treatment: Persistent, internal, inunctions (sixty to seventy); Hot Springs six times. 0.6 gramme "606," November 28, 1910. Wassermann reaction November 23rd, +; December 5th, +.

CASE XLIX. Female, æt. twenty-eight; tertiary syphilis; primary, February, 1907; secondary, March, 1907; syphilide, face, arms, legs. Treatment: Active since May 23, 1907; injections, internal medication, inunctions. 0.5 gramme "606," December 1, 1910; marked clinical improvement. Wassermann reaction November 25th, ++; December 12th, ++.

CASE L. Female, æt. twenty-nine; tertiary syphilis; dates of primary and secondaries not known. Right arm amputated five years ago for condition similar to present of left, diagnosticated at that time as cellulitis; left arm has been opened on same diagnosis. The condition is very similar to that of Case XXXVIII. Treatment: Probably little mercury. After the Wassermann reaction in May was given mixed treatment but the patient took it irregularly. 0.5 gramme "606," November 14, 1910. Clinical condition much improved, patient gained seven and one half pounds (Dr. Russell). Wassermann reaction May 3rd, +; June, +; November 29th, ±.

CASE LI. Male, æt. thirty-five; congenital syphilis; patient had necrosis of the bones of the foot appearing first at the age of fifteen. His mother, sister, uncle, each had the same trouble and in each case it came first at fifteen, the grandmother was said to have had a similar affection after the menopause (Dr. Russell). Treatment: Unknown. 0.6 gramme "606," November 29, 1910; patient had less pain in foot, otherwise no change. Wassermann reaction August, 1910, +; November 29th, ±.

CASE LII. Male, æt. thirty-eight; secondary syphilis early; primary, August 15, 1910; secondary, November 2, 1910; fading macular eruption. Treatment: Sodium cacodylate 1½ grains daily for one week; no effect noticed 0.6 gramme "606," December 1, 1910; three days later rash entirely gone, improved generally. Wassermann reaction December 1st, ++; December 8th, ++.

CASE LIII. Male; secondary syphilis, latent; primary, 1904, chancre on lip; secondary, 1904. Treatment: For one and one half years following primary lesion, injections, inunctions, and internal; intermittent since. 0.6 gramme "606," December 8, 1910; clinically improved; severe daily headaches present for some months disappeared entirely. Wassermann reaction December 6th, —.

CASE LIV. Male; tertiary syphilis; primary, 1902; secondaries, 1902; had tubercular syphilides of scalp. Treatment: Continuous for over two years after infection; from October 10, 1910, one month of biniodide and potassium iodide. 0.6 gramme "606," November 22, 1910; lesions entirely healed in two weeks. Wassermann reaction November 10th, ++.

The results of the Wassermann reactions in fifty-four cases are given: Of these seven became negative, one primary (iv) after four and two thirds months, one secondary (xxxii) after six days, one secondary (xv) after twelve days, one secondary (xxii) after thirty days, one secondary (xxxviii) after seventeen days, one tertiary (xiv) after twenty-one days, one tertiary (xxix) after twenty-six days. Unfortunately only one of these, the primary, has been followed over even a few months. In that one case (chancre of the lip) there has been no other symptom. In the other cases these reactions may show only a transient negative phase.

In nine cases the reaction was modified from complete inhibition without becoming negative. In sixteen no apparent modification came about. A phenomenon commonly observed appeared in two cases: The previous negatives became strongly positive after the injection. One of these was found again negative four days later, this patient (xxxvii) rapidly improved clinically. The reaction of the other (xix) remained strongly positive, the course of his optic atrophy was not checked, and he is now totally blind. Another case of optic atrophy (xxxi) with no clinical improvement showed constantly a strong positive reaction. Still another case of optic atrophy (xxxiv), but of short duration, showed marked improvement. Some of the reactions positive before injection were intensified.

The oscillations in the reactions are noteworthy. It has been suggested that they are due to daily differences in the rate of absorption (Herxheimer). Whatever the cause the changes are much more apparent than with mercurial medication.

Many strong positive reactions have persisted without diminution of intensity in the face of brilliant clinical results.

CONCLUSIONS:

This series of cases is too small, the time under observation entirely too short, and the figures published in the literature too vague for definite conclusions. The following is tentatively advanced:

The probability is that should "606" prove harmless future medication will combine "606" and mercury in selected cases. Perhaps a course of one, two, or more injections of "606" will be given, antedated and followed by mercury.

No patient should be treated without previous Wassermann reaction, and each case should be followed in its course with the reaction repeated in reasonably short periods. Negative reactions after "606" should be followed over a similar length of time as with mercury; negative phases, the so called precocious reactions, must be ruled out.

The certain small percentage of active tertiary cases with negative Wassermann reaction must have the indications for "606" treatment more clearly brought out. The demonstration of spirochætæ in such cases is not always possible.

In certain cases of obscure affections of the nervous sytem, giving a negative Wassermann reaction, but with antecedent history of lues, clinical results have apparently justified the use of "606."

I am deeply indebted to Dr. Fordyce for much the greater part of the clinical material, and to Dr. Chetwood and Dr. Johnston for "606" cases. Other acknowledgments are made in the text.

271 WEST SEVENTY-THIRD STREET.

ON THE REGULATION OF PROSTITUTION, WITH SPECIAL REFERENCE TO PARAGRAPH 79 OF THE PAGE BILL.

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Good laws are the expression of an enlightened public sentiment enacted for the protection of society as a whole and not for any particular or special class; such laws must receive the support of public opinion as wise laws usually do, otherwise it is impossible to enforce them and they are worse than useless. Laws which arouse antagonism or active opposition from thoughtful and law abiding members of society are likely to prove not merely a failure, but a menace to that society the protection of which was their avowed object.

Paragraph 79 of the Page bill has aroused such opposition. It is a measure introduced, ostensibly, to control the ravages of venereal disease, though similar measures in this and in other countries have resulted almost invariably in an increase of the evils they were supposed to decrease or remove.

Regulation of the social evil has never in any form secured a permanent footing on American soil; it is a measure essentially foreign in its aspects and a byproduct of old world opinions on the question of woman's inferiority to man. It is the attenuated survival of this mediæval opinion in foreign born men and the sons of foreign born men which permits the discrimination against the woman of loose morals in favor of the man who has less.

That the ravages of venereal disease are increasing there can be no doubt, that some measures must be found to check the progress goes without saying, but that this can be done by official measures directed against one of two equally offending parties is likely to be as effectual as would be an attempt to stem the Niagara River with a lace pocket handkerchief. The menace to society from the profligate man is even greater than it is from his paramour, for the character of the woman is known, she does not obtrude herself upon the public generally, but remains with her chosen companions, while the man who has voluntarily exposed himself to the contagion of a loathsome disease continues even after his infection by the prostitute to have business and social relations as before, with the result that innocent members of society are exposed to a dangerous and contagious disorder to which they have not exposed themselves and from which no effort is made to protect them. In view of the fact that the members of society suffering from venereal disease are mostly men, how would it be possible to control the evil without taking cognizance of the most important factor? And as they continue to seduce and to find victims at the most tender ages, as they are constantly soliciting, constantly using force or fraud to gain their desires, how could measures directed at the female sex only be productive of beneficial results?

As to the universality of venereal disease among men, Dr. J. Clifton Edgar says: "So long as men are infecting four fifths of womankind, it will be necessary to instil into the eyes of the newborn infant immediately after birth some drug to counteract this almost universal poison." Bulkley tells us there are between two and three million men in the United States suffering from venereal disease. Morrow says: "Statistics show that the majority of men who marry have contracted venereal disease and that many are the bearers of contagion to the women they marry."

In 1901, the Committee of Seven sent letters to 750 physicians in New York city, and reported on the data received that there were 162,372 persons in the city suffering from venereal disease in the private practice of these physicians, and of these about ninety per cent. had contracted gonorrhœa. Of 15,969 cases of gonorrhœa treated, but 1,941 were in women, and 488 in children of various ages. Nearly one third of the reported cases occurred in married women who had been infected by their husbands; and forty per cent. of these women were suffering from pelvic disease. Blaschko states that eighty per cent. of young men in German cities have gonorrhœa at least once, and that the average young man who lives in Berlin till his thirtieth year unmarried has gonorrhœa three times and syphilis as well. Dr. Joseph Taber Johnson says: "Not less than ninety per cent. of men in the larger cities of the world have, or have had, gonorrhœa."

It appears, then, that the male factor in the spread of venereal disease cannot be discounted, and there is a peculiar sickening horror in the thought that it is to his own family—his own wife and child that the husband and father is the greatest menace.

Venereal disease cannot be materially diminished until advice of a very different character from what they have received in the past is given to boys and young men when they come for advice to the more experienced. Physicians of a certain class have been a very important factor hitherto in the spread of venereal disease. When male patients came to them for advice in matters sexual, the doctor who they supposed knew his business pointed the way to the prostitute for the relief of their symptoms; and as all the world knows of the masculine hysteria abounding on questions relating to the genitourinary tract in the male, the pernicious advice so often given was followed, with the result that when the man married he brought, in thousands of cases, prolonged suffering to his wife and blindness or perhaps death to his tainted child.

In view of those facts is it a sound judgment which entrusts with the sex against whom these grave charges are brought the sole power of determining legislation on this subject?

It is this widespread prevalence of venereal disease among men which is responsible for race suicide, for a very large percentage of the mentally deficient and physically defective inmates found in our institutions, for one quarter of the blindness from which our people suffer. Also is it responsible for the martyrdom of a long life of invalidism, imposed upon an innocent wife or for the mutilating, unsexing operation she undergoes upon the operating table, sometimes followed by death itself. Professor Dudley asks the question: "Why do large numbers of apparently healthy young women, date their pelvic infection from the marriage week?" And on page 164: "The causation of hopelessly diseased uteri, tubes, ovaries, not to mention proctitis, urethritis, cystitis, rectal stricture, pyelitis, and nephritis, has been explained by the word 'idiopathic.' The histories, if written, would tell often of an apparently cured gonorrhœa in the husband before marriage." And Professor Ashton, speaking of latent gonorrhœa, says: "This is the explanation of the fact that so many young wives are infected by husbands who have not had gonorrhœa for months or years before marriage." Practically all gynæcologists make similar statements on this early infection of young wives by their husbands who at some time or other suffered from gonorrhœa. It is a very common occurrence.

But if it were possible to regulate public prostitution so that the man who refused to exercise his self control would still be protected from the woman who solicits on the streets, how shall we protect him from the clandestine prostitute, who is more to be dreaded, authorities tell us, than the public woman? Osler says: "The problem of syphilis is the problem of prostitution, more exactly it is the problem of clandestine prostitution, this the source of the disease." Von Düring states that the greatest part of prostitution is clandestine and for this purpose it is absurd to talk of regulating it. Morrow says: "Regulation fails to reach the large body of clandestine prostitutes." Evidence of this nature might be multiplied indefinitely.

Is it not illogical, unscientific, even foolish to expect any perceptible abatement in social diseases while thousands of men suffering from these diseases are allowed to mix freely in society, encouraged in sexual intemperance by protecting legislation and by physicians who prostitute their noble calling by advising the ignorant, the trusting, as well as the vicious, to have promiscuous relations with public prostitutes.

In Europe "regulation" has been tried for generations, and after a fair trial abolished in England (and in India), also in Norway, Sweden, Holland, and Denmark. In Germany men like Neisser declare it is worse than useless. Blaschko is of the same opinion; in France Fournier the foremost authority in that country, declared that venereal disease grew worse in spite of regulation, and a recent commission, Osler tells us, adopted the following motion by a vote of sixty to one: "The regulation of prostitution is to be condemned." Osler says further: "It is supported by very few of those venerealogists whose opinion is entitled to consideration." Von Düring says: "State regulation, after a fair trial, has done nothing in diminishing the occurrence of venereal disease; it has been a practical failure." In the light of such testimony is it well to urge its establishment in New York? Because its supporters hope that an ideal system will be found which will give perfect results, can such visions appeal to ordinary common sense? Are they not the vain hopes of a faddist?

Such results as these are to be expected when we consider that the attempt to make vice innocuous for men results invariably in an increased patronage for the prostitute; by any attempt at regulation the state places itself in the anomalous position of countenancing polygamous practices, yet severely punishing polygamy. By supplying grounds to the outraged wife for divorce which she might not otherwise have had, the state becomes a menace to the home without which it could not exist, and of which it ought to be the protector. That the sense of safety conveyed to dissolute men by medical supervision is at best fallacious is proved by the expressed and written opinions of our leading gynæcologists, which opinions are in direct controversion to those expressed by a recent writer on this subject, who makes the statement that "gonorrhœa will rarely escape detection unless the examiner is incompetent," and that "if gonorrhœa remains uncured after treatment it is because such treatment was incorrect or insufficient." In women gonorrhœa is often subacute from the beginning. In her case it is not likely to attract immediate attention, as it does in the male who is acutely ill and obliged to refrain from all sexual relations because of his physical suffering, and not because he fears he "may be a wilful spreader of the disease." In the woman the discomfort is usually not great enough for her to seek medical attention at first, and her inability to see her own vulva without using a mirror also leads her to overlook a venereal lesion; so the disease has time to establish itself in other parts of the genital tract where it is likely to become firmly entrenched and may remain quiescent for years, and resistant to every known form of treatment but none the less infectious. No doubt if the disease was seen in its acute primary stage and active drastic measures instituted, the disease might be eradicated; but for the reasons mentioned the disease is rarely seen in this stage, unless in those numerous cases of rape committed on children. The vast majority of gonorrhœal cases seen in women are chronic cases where the difficulty of detecting the germ, even by experts, is very great. But a few of the gonococci may be present, or they may be present in the tissues of the infected region rather than in the discharge. They may entrench themselves in Skene's glands and furnish infection from this source from time to time, while externally there may be no trace of their presence. When the infection has reached the higher zones of the genitourinary system, as Noeggerath and others have proved beyond dispute, no evidence of gonorrhœa may be found in the vagina or external genitals, while the woman is still capable of transmitting infection. When the uterus and appendages have become infected, what effect in the way of eradication of the disease can local treatment have? Such measures merely constitute the whitewashing process—the common treatment given to those cases. The only way to remove the infection is to remove the infected organs, and even that may not be sufficient, for gonorrhœa has been placed on the list of systemic diseases, and the gonococcus has been found in the blood, in the joints, even upon the valves of the heart. How, then, can a complete cure of gonorrhœa, which is said to be such a simple matter, be attained? Syphilis, the most destructive plague known to humanity, is also a systemic disease, and in some stages difficult or impossible to detect and requiring years of treatment. Who can tell when it is cured? The famous "606," which promised to be a successful remedy, is not the brilliant success it promised, and already there are numerous relapses.

Why declare a woman free from infection, then, when she probably is nothing of the kind, and why pretend to cure her in a few weeks of disease which requires years of treatment?

The basis of this legislation is the so called "physiological necessity" which the best medical consensus here and abroad declares to be without foundation. Professor Gowers, in the Lettsomian Lectures on Syphilis and the Nervous System, says: "I assert, as the result of my observation, and consideration of facts of every kind, that no man ever yet was in the slightest degree or way the better for incontinence." Dr. Howard A. Kelly states: "The overwhelming advantage in the race is to the continent man." Dr. Morrow says of the "physiological necessity": "We repudiate this counterfeit presentment of physiological truth." Dr. H. Neisser declares that "the opinion that the satisfaction of the sexual impulse is necessary to health is false." Dr. Edward L. Keyes, Jr., remarks: "Absolute continence does not in man or woman impair sexual instinct or appetite." The opinion is probably true that "the lower the individual in the scale of civilization the more conspicuous as a rule is his sexual power." In a well known textbook we read that "sexual intercourse, like smoking and drinking, is a pleasure which becomes a necessity, only from intemperate indulgence . . . the hold it gets on men resembles more the cocaine habit." From another source we learn that "for some of the very noblest types . . . indulgence in the sexual act is notably infrequent."

It appears, therefore, that the sexual appetite grows with feeding, but sexual intemperance is frequently associated with an intemperate use of alcoholic beverages, the latter acting to stimulate the emotions, while lessening the power of self control; so that alcohol thus becomes a very potent factor in the spread of venereal disease.

Statistics on specific diseases where the regulation of venereal disease has been in operation are not very helpful, as such diseases fluctuate in response to economic and other not very well understood conditions. Blaschko said in 1899 that "occasional prostitution far surpassed professional prostitution in Germany, increasing or diminishing inversely as employment or industry." In St. Petersburg domestics practise prostitution only when out of employment.

Here, then, is one key to the situation. Procure suitable employment for the girls with adequate remuneration for the same. The ranks of the prostitutes we know are recruited from the most poorly paid occupations, where the strain of making ends meet proves too great for the half starved, anæmic girl, who succumbs to temptation when a life of ease and comfort is offered to her. But twenty per cent. of public women take up the life voluntarily, the others are there through the force or fraud of those who find "procuring" a profitable industry. Little girls, children of the very poor, and many orphans without guardians are at a very early age the victims of the seducer and later of the procurer. Most of these women under other social conditions than those which are not of their making would be happy wives and mothers and useful citizens; but now we know that the average life of the woman prostitute is but five years, that every year, 40,000 of these women die, and that thirty per cent. lose their lives as the result of gonorrhœal infection.

If every year 40,000 men were doomed to a miserable ignominious death as the result of a life forced upon them in their early youth by an uncontrolled, even fostered sexuality, would not the publication of such facts rouse a storm of wrath and indignation which would tear down and sweep away the barriers erected by political and commercial corruption around those who prey upon their own kind, who find in the degradation and destruction of the youthful and helpless a source of enjoyment and of wealth?

It would seem that conserving such a large part of the human race as United States citizens would be quite as valuable to the nation as the conservation of forests or waterways. But how can it be done? Various methods have been tried. The prostitute has been treated as a vicious and dangerous criminal, hounded and branded, taxed and taxed again, segregated and ostracised. And yet this victim of the seducer was at one time just like any other woman; no better, no worse, only conditions were too hard for her, and the legislation which so carefully protects houses and lands failed utterly and still fails to protect the young, helpless, friendless, sometimes homeless girl. The honor and chastity of the maiden receive but little protection from men, who later, when she has become what they have made her, is a victim of such legislation as we have in clause 79 of the Page Bill.

When we consider the tremendous expense of enforcing any form of "regulation," one cannot help thinking how much better it would be to use the money in prevention of the evils regulated. It is likely to prove a fatal error to give comfortable positions to those who thus have a direct and pecuniary interest in maintaining the system, who will always boost it by unfair and favorable reports because it is to their advantage to do so.

To decrease prostitution we ought to have education in the physiology of sex in the public schools, and there should be public instruction for all interested besides, something such as we have in the case of tuberculosis. Economic conditions for women should be improved, so that they are not forced on the downward path by hunger. Recreation and amusements should be provided to which all may be safely admitted; better protection of women through legislation, and the enacting of laws providing for the punishment of those who knowingly communicate venereal disease; making the report of all communicable disease to the Health Department compulsory, with proper provision for treatment when necessary; laws providing for a certificate of health from every candidate for a marriage license of freedom from communicable disease; and, if the lawmakers would permit themselves to so lacerate the feelings of the male, requiring from every man who visits a brothel, that he submit to a medical examination from one of his own sex, that he have his finger prints taken and his name recorded by health officials, either man or woman, and that he further submit to treatment if necessary. In a very short time every house of prostitution would be closed for lack of the pecuniary support which men and men only tax themselves and families to afford.

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61 EAST THIRTY-SIXTH STREET.

REST, EXERCISE, AND FOOD IN THE MANAGEMENT OF TUBERCULOSIS.*

By A. P. FRANCINE, A. M., M. D.,
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There is no feature in the management of tuberculosis more important than the proper adaptation of rest and exercise to the individual patient. This is not only true of the earlier and active stages of the disease, but also of the later stages and the after cure. For this reason I will briefly discuss the subject from these two different points of view.

Rest in the beginning for active cases had been so thoroughly emphasized that this phase of the subject is pretty generally understood even by those who have given no special attention to tuberculosis. Rest is the strong arm of the service, it is the great agent for combating symptoms. Just so long as there is evidence of an active process locally, and just so long as there is evidence of toxæmia resulting from this, just so long is there one way and one way only of controlling it. The principles underlying this are sufficiently plain.

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*Address in "Symposium" on Tuberculosis, Philadelphia County Medical Society, September 28, 1910.

In all moderately advanced cases with fever, rapid pulse, cough, etc., the patients should be confined to bed until these symptoms are relieved. In most early cases the patients are far better off for a preliminary rest cure in bed, and in the beginning even in incipient cases the patients should take as little exercise as possible. The difficulties in the way of applying this to poor people, dependent upon their labor for a livelihood are very great, often insurmountable, and for that reason it is best to send such patients to infirmaries and sanatoria. Much, however, even under adverse conditions can be done in the homes by getting such patients out on roofs, in yards, on porches, or by the use of window tents; and by securing the cooperation of the organized charitable agencies existing in all large cities for the assistance and care of their families.

Fever, cough, night sweats, loss of weight, anæmia, weakness—all indicate rest. As an example of its practical application let me instance the chronic type of case, in which the patient, while without fever or other symptoms, yet suffers with a coughing spell on rising through which he loses his breakfast. Such patients should stay in bed without eating, keeping their head low until this coughing and gagging spell is over, should then rest quietly with the head raised for a half hour or so, to allow their stomachs to settle, should then take their breakfast in bed, and rest in bed for an hour or so after. In this way they can retain their first meal.

I wish to lay greater emphasis on the use of properly regulated exercise during convalescence. This is the more difficult part of the cure, is less generally understood; and I feel very strongly that the modern tendency is to carry the rest cure too far, or at least to neglect this very essential termination of the treatment. This is true in the management of patients in their homes, but it is especially true of sanatorium treatment. I recognize a growing tendency among sanatoria to make the patients take graduated exercise, but in most instances it is incomplete or ineffectual, because not carried out systematically or to its logical conclusion. There is a too general fear of producing temporary attacks of autointoxication, and too great a tendency to maintain the patients' weight at the highest point possible.

It is usual to consider that a patient is doing well in relation to the amount of weight he is gaining. This is too apt to be looked upon as the great index of improvement. In a measure, within limitations, it is an index, but it should by no means be the only one, nor, indeed, the fundamental one. It is equally important that the patients' strength and endurance should be developed. This will usually entail the loss of a reasonable amount of surplus weight. For, the final object of treatment should never be lost sight of, which is not to enable the patient to stay well under ideal conditions, but to fit him for a life of reasonable activity and usefulness—indeed, often from necessity, for the same occupation and environment which broke him down. In the great majority of sanatoria in this country this would appear (to judge from results) to be but imperfectly understood, or, at least imperfectly applied. This should be remedied, because in a large measure it is a factor in the so called relapses in this disease. One could hardly expect a clerk or shop girl who had recovered their health by six months or more of idling in a sanatorium to go back to their narrow home surroundings and routine occupation and remain well—even supposing they have been doing the usual amount of exercise permitted patients in arrested cases, like keeping their own room in order, helping wait on the sicker patients, taking walks, or working, more or less, in the garden or in the poultry shed. But this is not enough. If that same patient had been carried through a systematic course of graduated hard *labor*, had their muscles hardened, their endurance toughened, been carried along to a point where they were doing harder, more fatiguing work at the sanatorium than they would ever be called upon to do at home—then there is some chance, and a very good chance, that they can go back to the old life and keep well. For at least the mere fatigue of the former occupation will not of itself be a factor.

In this connection I should like to refer in the highest terms to the system of graduated labor carried out by Dr. Paterson at the Brompton Hospital Sanatorium at Frimley. I have seen Dr. Paterson's work and I know what splendid and lasting results he gets. Of course he has a peculiarly favorable class of patients and the usual run of cases in our sanatoria would not be suitable for these measures. But it is this principle of treatment, when applicable, upon which I want to insist.

I think we have an exaggerated fear in this country of the injurious effect of autointoxication. This fear of producing a temporary fever reaction accounts for our timidity in carrying cases sufficiently along the road of exercise. Such reactions are not to be desired, but they are not to be unduly feared. Of course, practically, all Dr. Paterson's patients are on hard labor, the cases are early and favorable, and in most of them the disease, perhaps, is pretty well arrested before the patients begin the course. It is probably owing to this fact and to the admirable gradation of the labor that reactions are not more common. When a reaction does occur the patient is put at once to bed upon absolute rest. This, too, is noteworthy as being more systematic than is usual with us. The patient is not allowed to talk or read, is instructed to lie perfectly still; is not permitted to wash his own face or hands, nor even to get up to go to the toilet; in other words, the rest is as complete as it possibly could be, like that of a typhoid fever case. I studied a number of Dr. Paterson's charts and saw a few patients who were having an autointoxication, and was surprised how very quickly these reactions subsided.

As soon as the patient is up and about he goes back to work, not to lighter work, but to the same work he left off. Few of them seem to react again and none of them seem any the worse for their temporary overdose of toxines. There is little or no hæmorrhage. Let me emphasize my point of view, namely that the after cure of an early favorable case in an arrested stage, should not differ in any essential way from the "training" by systematic open air exercise of a physically healthy man *except* in so far as his pulmonary lesion is a factor in his general condition. A good trainer of athletes would make a good man in charge of a convalescent farm *provided* he had the necessary medical knowledge and experience to estimate just what consideration must be paid to this factor in the individual case in relation to 1, the possibility of lighting up the quiescent process, and, 2, in reducing his normal vitality and endurance.

The subject of food in the home treatment of tuberculosis resolves itself for practical consideration into a matter of domestic economics. Strictly speaking it is a social and economic rather than a medical problem, though it concerns us very closely as physicians, and it is through us that the problem must be remedied, at least indirectly. For consumptives who are sufficiently well to do to set a good, wholesome table there is little advice needed. Practically all of the usual articles of diet may be eaten, provided they are properly cooked. But with the average type of consumptive among the poorer working classes the question of food becomes a very serious problem, and one which must absolutely be taken into account. It may be discussed conveniently under the following phases:

1. The cost of food. How can we feed properly a family on five or six dollars a week for food?
2. The choice and selection of foods among the poor and ignorant.
3. The preparation of the food.

It is seen at once that we are dealing with the ever present problem of poverty and ignorance; and the solution of it lies in education and personal effort.

Paradoxical as it may seem, there is no class of people which relatively live so extravagantly as the poor. Their means renders it impossible for them to buy in quantity, and their ignorance renders it impossible for them to buy intelligently. We buy our coal by the ton, and it costs, let us say, six dollars; the poor buy theirs by the bucket, and their ton costs them about twice or even three times as much. While in the aggregate they spend what would be enough money for coal to heat their houses well, and do their cooking properly, yet they are wasting two thirds of their money, and consequently their houses are not warm and their food is not properly cooked. We pay fifty cents a bushel for potatoes. The poor man buys the few vegetables he uses in extravagantly small quantities. His potatoes cost him about two dollars a bushel.

The same thing applies to their selection of food. Dr. William G. Turnbull, of Philadelphia, made an investigation of the diets of fifty families of the class referred to. He found that meats were very widely used, often three times a day, in spite of the high prices. Those most commonly bought were such as required no cooking, like bologna sausage, and pickled herring, or which could be quickly fried, like liver and pork chops. Stewed meat or mutton and meat soups were little used, partly on account of the cooking required, and partly on account of habit—fried, salt, or pickled food appealing most to the appetites of these patients, particularly the foreigners. They all buy baker's bread at five cents a loaf—they never bake bread themselves—they never make corn bread. Cheap sweet cakes and cinnamon buns are extensively used in place of bread, because no butter is required. They never have any meat gravies to take the place of butter. Vegetables are little used, on account of the trouble of cooking. Beans were little used, except baked and canned beans, a very extravagant method of using this valuable food. Carbohydrates are a particularly lacking element in the diet of the poor. The most neglected class of foods were the cereals, the trouble of cooking again accounting for this. Oat meal was used in only a few families, and then only cooked for ten minutes. Rice, which is perhaps the cheapest and most nutritious of the common cereals, was almost never used, and the same may be said of corn meal. Pickles and jellies were widely used, often at every meal. In one family of five, spending fifty cents a day for food, ten cents a day was being spent for compound jelly; one fifth of the total expenditure for food. Tea and coffee are enormously abused, children being often sent to school after a breakfast of tea alone. Tea and coffee among the poor are used as a substitute for food, to take away the appetite.

In regard to the preparation of food, they know nothing about cooking to begin with, and, secondly, they have not the facilities for cooking. They can not bake bread; their ovens, when they have any, will not bake. They can not roast or stew beef, for they can not keep their miserable stoves hot enough for any length of time. They are in a hurry for their meals and they can not take the time. They are thus reduced to the frying pan.

These are some of the difficulties to be overcome. What can we do? We can do a great deal; we can even remedy all these evils, but we must begin by teaching them how to buy, teaching them what to buy, and teaching them how to cook!

Dr. Turnbull showed that the average expenditure of his patients was twelve and one half cents a day for food. He further shows, what may appear at first remarkable, that if the patient is receiving or buying two quarts of milk and four eggs a day, he can live easily and well on less than this amount. As he well says, "The question of meats can, if necessary, be entirely disregarded, as scarcely any carbohydrate diet can be picked out, which will not when taken with two quarts of milk and four eggs give an excess of proteid and fat. A properly prepared diet affording 125 grammes proteid, 100 grammes fats, and 400 grammes carbohydrates, equaling 3,000 calories, is entirely sufficient for the average tuberculous patient (King, Fisher, and others). Two quarts of milk furnishes about sixty-five grammes proteid, eighty-one grammes fat, and 100 grammes carbohydrate; four eggs furnishes twenty-six grammes proteid and twenty-one grammes fat, making a total of ninety-one grammes proteid, 102 grammes fat, and 100 grammes carbohydrate, equaling 1,700 calories, the fats being already in excess. Now then, a loaf of bread costing two and one half cents, a cupful of boiled rice costing one cent, two potatoes costing at the most one cent, with sugar and salt, extravagantly rated at one cent, will bring the total up to 132 grammes proteid, 107 grammes fat, 409 grammes carbohydrate, all in excess of the required percentages, at a total cost to the patient (with the exception of the milk and eggs) of five and one half cents for the day." This is not set forth as a practical diet, but simply to show what can be done in the way of furnishing sufficient calories at little expense by intelligent selection.

All these problems could be simplified if there existed, generally in connection with philanthropic agencies and particularly in connection with tuberculosis dispensaries diet kitchens, where patients could be sent to learn how to economize in the choice and selection of food; could learn the simpler rules of cooking, could be instructed in the use of the fireless cooker, and its simple and inexpensive construction; and where the medical supervision of the physician could be supplemented by easily learned facts in regard to habits of eating.

218 South Fifteenth Street.

CLIMATE AS A CURATIVE AGENT.

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Realizing that medical sentiment is constantly changing and that opinions, supported by the highest authorities to-day, may be repudiated by equally great men of to-morrow, and that one extreme is usually followed by the opposite, we venture to express our convictions on the therapeutic value of climate, believing that the pendulum of professional opinion has swung too far toward the negative end of the arc and that the influence of climate on health and disease is worthy of more consideration than the leaders of medical thought, of the times, are inclined to give it.

In a recent publication on the Relation of Climate in the Treatment of Pulmonary Tuberculosis, by Past Assistant Surgeon F. C. Smith, constituting *Public Health Bulletin No.* 35, although an admirable article in most respects, the prevailing idea expressed and supported by many of our best authorities on this subject, is that the advantages of an elevated inland climate for tuberculous patients is not so great as was formerly supposed, or, if I can read between the lines, is of little or no account except by reason of the greater facilities it affords for outdoor life. After eighteen years' practice in Pennsylvania, followed by nine years in Colorado, with all due respect for the opinions quoted, and with a full understanding of the growing sentiment throughout the east of the inefficiency of Colorado climate for tuberculosis, we cannot subscribe to this sentiment. We believe that the failure of the eastern physician to understand the action of our climate, and the sending of unsuited cases here, simply because they may happen to have tuberculosis, without due consideration as to whether the case in hand is of such a character as to be suited or unsuited for our climate, is accountable, in a large degree, for the growing unbelief in the efficiency of climate in this and other diseases. "Consumption calls for creosote or Colorado" no longer holds good. But this does not to my mind mean that in some cases creosote may not be indicated, and in a large class of cases Colorado climate will not be a most important factor in bringing about a cure. The question should be what class of tuberculous patients may reasonably be expected to improve and what class may be made worse by our stimulating climate.

The benefits of a properly selected climate may be predicted, with as much certainty, by a student of this important subject as the benefits of iron, arsenic, strychnine, or any other medicament by a student of materia medica; and conversely, the injury to a patient arising from an unwise selection of a climate, may be as great as that caused by the injudicious use of any powerful drug. It goes without saying that a physician should not prescribe a drug or medicine, whose physiological action is unknown to him. It is equally important that the physician understand the physiological action of a climate before prescribing for his patient in this respect. With this idea in mind, I feel that a short review of this subject, both the physiological action and practical application of the two great classes of climate, may not be altogether without interest; not that the author has anything new to offer, but rather for the purpose of recalling to the minds of the readers of the *New York Medical Journal* some points which they may have overlooked or forgotten, and to register an objection to the growing sentiment of the small importance of climate as a curative agent.

From the physician's standpoint, there are but two classes of climate, the sedative and the stimulating—the low, warm, moist climate of the sea coast, and the high, cool, dry climate of the interior mountainous districts. We may take Florida as a type of one and Colorado of the other. The climate of places between the coast and the mountains may be classified with either one or the other, according to the preponderance of characteristics of either. The difference in the action and effect of these two classes of climate is as great and as uniform and as opposite as the difference between the effect of bromides and strychnine, so that whatever is said of one class will apply conversely of the other.

The principal characteristics by which one climate is distinguished from another are altitude, humidity, temperature, amount of sunlight, character of soil, and prevailing winds. There are, of course, other minor differences that need not be mentioned. One of the most important characteristics is, of course, the altitude. Places of considerable elevation differ from the lowlands in physiological action on account of a lessened amount of oxygen to each cubic foot of air and a lessened atmospheric pressure, which requires an increased respiratory effort to obtain the required amount of oxygen. Deeper, fuller, faster breathing, more complete flushing of the air cells, increased chest expansion, development of chest muscles and the whole respiratory system, and an increased elimination of carbon dioxide. In some cases of tuberculosis, such as acute consumption, or those far advanced with great destruction of lung tissue, or those patients having a persistent high temperature, we would reasonably expect any considerable increase of altitude to be positively harmful; and, I think, experience with such cases will bear out this *a priori* deduction. On the other hand, there is a large class of incipient cases in which the increased respiratory action of a moderate altitude would not be harmful—might even be beneficial by increasing the lung vigor—which, when taken with the other invigorating effects to be mentioned, will have a great influence in bringing about a cessation or a cure of the disease.

The heart's action is also increased in force and frequency. The blood is returned to the lungs more often to get and distribute the required amount of oxygen, thus aiding the respiration in the increased elimination of carbonic acid and other waste products. In addition to this compensatory effort of the heart and lungs, due to a lack of oxygen and pressure, the oxygen carrying power of the blood is increased by an additional formation of hæmoglobin and an increased number of red cells—another compensatory effort. But this is not all, if the report of a German scientific society, who spent some months in the Swiss Alps, is to be believed. On a thorough study of this subject, the members of this society found that a moderate altitude, from 4,000 to 7,000 feet, had a stimulating effect on proteid metabolism, which soon manifested itself and persisted for a considerable time after a return to a lower level. This proteid assimilation, which is so directly related to cell growth and cell respiration, assumes the phase of metabolism present in the young and growing animal. In short, a renewal of youth. This statement, if confirmed, will explain the very numerous cases we see of remarkable gain in weight and strength and spirits, practically a rejuvenation of youth in eastern people on first coming to Colorado and, in the author's opinion, is of the greatest importance, especially in tuberculosis, where the retardation and cure of the disease depends so much on the vital resistance of the patient. Another blood condition which, in all probability, plays no unimportant part in the relative immunity of residents and cure of properly selected cases of tuberculosis, is an increased number of lymphoid cells, shown to be uniformly present at this altitude by Dr. G. B. Webb and Dr. W. W. Williams, of Colorado Springs, affording additional defense against the inroads of the enemy.

Most stimulating climates have a lower percentage of humidity than the sedative by reason of their long distance from large bodies of water, effect of mountain ranges on precipitation, character of the soil, and uniformly lowered temperature. The moisture ladened clouds, coming to eastern Colorado from the Pacific are required to rise to such an altitude, in crossing the Rockies, that most of their moisture is precipitated in rain or snow before reaching the eastern slope. Among the advantages of a dry climate to the invalid we mention greater comfort, both in summer and winter, by reason of the rapid evaporation of the perspiration, increased action of the skin, greater difference in the temperature of the sunshine and the shade, and of the day and the night—diathermacy—affording cool air at all times, in the shade and freedom from the depressing effects of hot and sleepless summer nights. Fewer clouds and more sunshine afford better opportunities for outdoor life, while the bactericidal power of both the atmosphere and sunlight is undoubtedly increased by absence of moisture.

The temperature of the atmosphere is also an important factor in the tonic effect of a mountain climate, as compared with that of the lowlands. Temperature, of course, falls as one recedes from the equator and as one rises above the sea level—about one degree for every 300 feet elevation. The cool air of a moderate elevation invigorates the respiratory centre as well as the digestive system. Stomach and bowel troubles are not nearly as frequent in Colorado as in the eastern and southern States, and, in any locality, the winter months are usually associated with a gain in weight and vigor of both the well and the sick. Cool mountain air also invigorates the nervous system and, through it, the whole body. We all feel brighter and more hopeful in a clear cool atmosphere than in a moist and cloudy one.

The inhibiting influence of a low temperature on germ life is of no little importance. Tyndall pointed out that at 8,000 feet above the earth the air was absolutely sterile and that but few germs were found at 7,000 feet. The very rapid progress of tuberculosis, uniformly reported among our soldiers in the Philippines and the beneficial results reported by Dr. Frederick Sohon, in a case of the same disease, in his expeditions to the sterile air of the Northland, are in such marked contrast as to lead us to believe that, in some way, a clear, cool atmosphere is most beneficial to those suffering with this disease at least.

The sudden changes usually experienced in a stimulating climate may or may not be desirable. In the very old or very weak or those having Bright's disease the sedative climate is positively indicated, but for persons of a fair amount of vigor, a sudden but moderate lowering of the temperature probably has about the same tonic effect as a cold bath.

Another characteristic of all climates must not be overlooked, and that is the character and amount of sunlight. In Denver there are forty-four clear days and sixteen cloudy days to twenty-seven clear and thirty-one cloudy in New York, while the partly clear days are about the same in both cities. In addition to the greatly augmented opportunities for outdoor life, which is a matter of prime importance in most debilitating diseases, the bright light of most elevated regions, undoubtedly favors increased metamorphosis of tissue and an increased elimination of waste product by the skin and, in the author's opinion, acts as a stimulant to the nervous system. Few nervous conditions are improved by our Colorado climate, but rather made worse. Many residents are required to seek relief from overwrought nerves, manifested chiefly by sleeplessness, about once a year at places of less altitude, and appear to get relief most rapidly in the cloudy regions of Washington and Oregon. The bactericidal action of sunlight, which is of no little importance, has been shown to exist in proportion to the number and force of the actinic rays, and is doubtless due almost entirely to them, rather than to the heat or light rays. That this influence is greater in places of considerable elevation, where these rays are most numerous and active is indicated by the increased sensitiveness of photographic plates and by the more brilliant tints of the mountain flowers.

Having in mind the physiological action of these two classes of climate, as briefly expressed as possible, the author ventures to suggest a list of diseases or conditions which, according to his observation, and that of many of his medical friends, who have practised both in low and high countries, would call for a residence in one rather than the other of these different climates.

Diseases in which a stimulating climate is usually indicated: Empyema; unresolved pneumonia; asthma; small, weak heart; functional heart disease; digestive disorders; malaria; anæmia; articular rheumatism; moist nasal catarrh; diabetes.

Diseases in which a sedative climate is usually best: Emphysema; nervous diseases, except melancholia; aneurysm; atheroma; cardiac dilatation, and all organic heart lesions; dry nasal catarrh; muscular rheumatism; nephritis.

Tuberculous cases benefited by stimulating climate: All cases contracted at elevation should remain, also those inheriting strong tuberculous tendencies; tuberculosis of other structures than the lungs; all incipient cases without persistent high temperature; chronic fibroid cases when not too far advanced; tuberculous cases requiring sedative climate; acute tuberculosis; all cases with constant high temperature; very far advanced cases with great destruction of lung tissue; cases complicated with other conditions contraindicating elevation, as of the heart or nervous system.

This list is only suggestive and is subject to numerous exceptions, conditioned on the character and stage of the disease in question, the degree of elevation, and other climatic conditions required, as well as the available sanatoria and other accommodations for the care of the patient.

In addition to these general suggestions we must never fail to take into account the age, character, nervous make up, and financial condition of the patient. In other words, his ability to use and enjoy the advantages of a suited climate away from home without sacrificing other essentials to recovery obtainable only at home.

We believe any change of climate may be beneficial in many unimportant cases of illness, but that in tuberculosis or other cases of gravity a change to a climate contraindicated is a serious mistake and one that will result in great harm to the patient.

We hold that each case must be considered individually, and that the climate prescribed must be decided upon, more on account of conditions present and symptoms manifest than by the name of the disease.

Realizing that this paper is already too long, the author ventures to add a sort of a tabulated résumé in the hope that it may not be devoid of all interest to the readers of the *New York Medical Journal.*

Climates are either: Stimulating, as Colorado: High, dry, cool, clear.

Or, sedative, as Florida: Low; moist; warm; cloudy.

Physiological action of these are opposite, and cases improved by one will be made worse by the other.

Principal characteristics of any climate: Altitude; humidity; temperature; sunlight; character of soil; prevailing winds.

Physiological action of *altitude* due to less oxygen and less pressure. Causes: Increased depth of breathing; increased rate of breathing; increased chest expansion; increased elimination of carbon dioxide; increased number of red cells; increase in hæmoglobin; increase in lymphocytes; increase in cell formation; decreased blood pressure.

Effects all due to effort of Nature to compensate for lessened oxygen and lessened atmospheric pressure: *Humidity,* absolute and relative, depends on distance from ocean; mountain ranges; character of soil; temperature. Dry climate accounts for: Increased comfort in both summer and winter; increased action of the skin; increased diathermacy; increased sunshine; increased outdoor life; increased germicidal power of air and sunlight.

Denver has fifty-two per cent. humidity; the coast, middle, and southern States about eighty-seven per cent. *Temperature,* metallic and sensible, lowered by distance from equator and altitude. Cool air: Invigorates respiration, digestion, nervous system, whole body, and inhibits germ life.

Sunlight favors: Metabolism; elimination of waste product; action of nervous system; function of skin; destruction of bacteria; outdoor life.

Prevailing winds and storms do harm when winds are chilling or contain much dust. Character of soil affects humidity; dust storms; drainage; drinking water; mosquitoes, etc.

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A NEW AND SUCCESSFUL THERAPEUTICAL USE FOR OLD STAPHYLOCOCCI BACTERIN.

By BERNARD R. LEROY, M. D.,
Athens, Ohio.

The writer is not aware of the publication of any information covering this particular use of old preparations of the opsonins. He offers the following report of an interesting study along these lines on account of the efficacy of the remedy, the simplicity of application, the freeness from all sequences that follow the hypodermic use of the bacterins, and the rapidity with which the remedy works. The time of treatment required, as compared with the subcutaneous injections of the fresh bacterin, is much shorter and much more pleasant, items of considerable value.

During the summer of 1907, while engaged in making a comparative bacteriological study of certain parasitic microorganisms found on the bodies of persons suffering from certain forms of insanity, the writer had occasion to make and use considerable quantities of the staphylococci bacterin. A mixed form of the bacterin was made from fresh cultures of the *Staphylococcus pyogenes albus* and the *Staphylococcus pyogenes aureus* in about equal amount. The bacterin was made very strong, and this particular bottleful was made the density of thin cream. The bottle, of eight ounce capacity, was sealed with paraffin, wrapped in amber colored paper, and placed in a cool, dark place and immediately forgotten for a space of over two years when it was brought to light and examined. It was found to be separated into two portions, the upper and greater portion was a yellowish serum colored fluid, the lower portion was of a gelatinous nature and of a deep red color. Upon agitating the substance it broke up into flakes which became suspended in a homogeneous manner, making a fluid the density of thin cream.

Wishing to learn whether it had lost its immunizing power or not, and not caring to inject it into the circulation, I applied it topically in a case of exaggerated pustular acne, the face, neck, back, breast, and arms being covered with the pustules. The diseased surface was painted with a camelhair brush, frequently shaking the bacterin. At once the skin became intensely red, with considerable sharp stinging pain which lasted for a few minutes; then all was pleasant. The redness subsided within a few hours and nothing further was noticed. The treatment was given every day, the few unpleasant symptoms becoming less and less until there was practically no reaction whatever following the application of the fluid. The clinical results were most rapid in action and very pleasing to all concerned. The face cleared up without further pustulation. The comedoes dried up and were removed by rubbing the skin briskly with a coarse towel, the comedoes rolling out like shot. Nor was this the most gratifying thing to be recorded. The substance had a most salutary effect upon the pores of the skin, causing the coarse, open pores to be constricted so as to leave the skin smooth and delicate in texture, producing a normal condition most desirable. In all twenty-eight cases have been treated after this manner without a failure. This seems quite remarkable when we recall that the bacterin is now over three years old, is sterile, is without odor or sign of change other than what has been mentioned.

This substance is being used on a case of rhinophyma with the most gratifying results. The surface of the nose being painted with the solution mentioned in the foregoing article. The solution has been used in cases where suppuration has been part of the trouble, regardless of the other conditions present, with the same cheerful result as mentioned in the cases of acne.

The writer has prepared a quantity of the bacterin, intending to put it away until aged and then try it in suitable cases to see if it will vary in action from that under study.

There are many laboratory workers who may have an old stock of opsonins on hand, and if found uncontaminated, a trial similar to the ones mentioned in this article would be in order.

Should this prove to be reliable in well preserved fluids, the treatment of acne, and all pustular diseases of the skin, will be so greatly modified and withal be so pleasant that this form of disease can well nigh be exterminated. It will be hailed with delight by those unfortunates who are afflicted with the milder forms of rhinophyma.

IMPETIGO CONTAGIOSA TRANSMITTED BY MACHINE OIL.

By Otto V. Huffman, M. D.,
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A brief history of an epidemic of impetigo contagiosa among the machinists of a local manufactory is of interest because it brings forth some facts not obtainable from individual personal histories and shows the necessity of investigating infectious diseases in a comprehensive way, and of enforcing sanitary precautions in machine shops. As long as these patients were treated by their several physicians, a variety of diagnoses were made without discovering the cause of the disease.

In March, 1909, quite a number of the machinists working in the screw machine department complained that the oil which they were using caused a rash where it came in contact with the skin. The company sent a specimen of the oil to the laboratory to be examined. It was found that the oil did not contain any chemical impurities, that it was neither acid nor alkaline. It did not seem necessary to look into the matter of organic impurities, as the oil was made from lard which during the process of rendering was heated to a sufficient degree to make it sterile.

Upon receiving the report that the cause of the rash complained of by their men could not be found in the oil as purchased, the company ordered the complaining men to report for examination and treatment and to bring some of the oil actually used by them.

Quite a number had complained, but only six reported. Of these six machinists, five presented inflamed papules and pustules distributed irregularly over the upper extremities, face, and neck, wherever the oil might reach the exposed skin. The sixth man did not have a rash, but said that he had had a "felon" on his thumb which was entirely healed. Upon questioning him, he stated that he had worked at a screw machine supplied by the same oil pump as that which supplied oil to the machines and lathes of the other five men; that he had worked in the oil while the abscess on his thumb was discharging pus; that this occurred just before the rash appeared upon his fellow workmen; that he had not had any rash but thought perhaps that his abscess might have been due to the oil.

This verbal evidence needed only to be supplemented with knowledge of the lubricating system of these six machines to point clearly to the fact that the pyogenic germs discharged into the oil from the abscess on the finger of this man had been the cause of the pustular rash on the other five. At the factory it was found that the waste oil of the six machines at which these men had worked drained to a common reservoir from which after being strained it was again pumped to the same six machines—thus making successive cycles. The identical oil which had been at one time in contact with the abscess had been mixed with all the oil in the reservoir and thus diluted had been splashed upon the arms and faces of the machinists.

The men with the rash were cleaned first with tincture of green soap, applied with pledgets of cotton so as not to cause scratches or points of inoculation, then with alcohol to further help dissolve the oil which might be absorbed carrying the pyogenic germs beneath the skin in the same way as plague bacilli may be inoculated by inunction. The parts were then gently dried and dressed in ammoniated mercurial ointment held by gauze bandages. The men were kept from work and made uneventful recoveries.

It is interesting to note that, although the man who had had the abscess on his finger continued to work in the oil laden with pyogenic germs, he did not develop a rash. He had evidently acquired an immunity to the pyogenic germs of his own pus.

As it was clear that the oil pumped to the six machines was laden with pus germs which caused the pustular rash, it was recommended to the company to destroy or sterilize it. Further inquiry in regard to other complainants showed that a few who had worked temporarily at some of these machines had slight rashes and that others presented skin diseases which in no way could be attributed to the oil. The company destroyed the oil and has had no trouble since.

THE LEVERONE.

MAGIC AND MEDICINE: A STUDY IN THE BORDERLAND OF SCIENTIFIC LIGHT AND DARKNESS.

By JOHN KNOTT, A. M., M. D., Ch. B., and D. P. H. (Univ. Dub.); M. R. C. P. I., M. R. I. A.; etc.,
Dublin, Ireland.

(Concluded from page 1286.)

Quite as mysteriously significant, and apparently influential, in the range and complexity of its cosmic associations was the other special stellar number, TWELVE. This included the series of the constellations of the Zodiac, those specially grouped battalions of the "heavenly host," at the head of which was placed the Sun, the source and preserver of light and life on earth; to preside in due rotation over each, during the corresponding monthly section of its annual course. The *"Signs"* were, naturally, enumerated in an order of precedence commencing from the vernal equinox: Aries, Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius, Pisces. Each of these was, as a matter of (cosmic) course, governed and guided by a presiding angel: Malchidiel, Asmodel, Ambriel, Muriel, Verchiel, Hamaliel, Zuviel, Barbiel, Adnachiel, Haniel, Gabriel, and Barchiel, respectively. They corresponded terrestrially to the *twelve* months of the year, in respective order: March, April, May, June, July, August, September, October, November, December, January, and February. And each became the special, divinely appointed, guardian of one of the twelve tribes of Israel: Dan, Reuben, Judah, Manasseh, Asher, Simeon, Issachar, Benjamin, Naphtali, Gad, Zebulun, and Ephraim. Each was associated with one of the *twelve* orders of blessed spirits: Seraphim, Cherubim, Thrones, Dominations, Powers, Virtues, Principalities, Archangels, Angels, Innocents, Martyrs, and Confessors, respectively; with one of the *twelve* minor prophets: Malachi, Haggai, Zachariah, Amos, Hosea, Micah, Jonah, Obadiah, Zephaniah, Nahum, Habakkuk, and Joel; and similarly with one of the *twelve* apostles: Matthias, Thaddeus, Simon, John, Peter, Andrew, Bartholomew, Philip, James the Elder, Thomas, Matthew, and James the Younger. The superintending care of the signs of the Zodiac extended, as might be anticipated, to the sections of the human organism: head, neck, arms, breast, heart, belly, genital organs, hams, knees, legs, and feet, in the same respective order. Each had also its assigned plant, to which it functioned as patronizing guardian: sang, upright vervian, bending vervian, comfrey, ladies' seal, calamint, scorpion grass, mugwort, pimpernel, dock, dragon wort, and aristolochia, respectively; and its own consecrated gem: sardonyx, cornelian, topaz, chalcedony, jasper, emerald, beryl, amethyst, hyacinth, chrysoprase, crystal, and sapphire, in corresponding order of sequence. And classic Greece and Rome did not neglect to appoint an aristocracy of *Dii majores,* the members of which were distributed, in respective order, to the governing supervision of the Zodiac; each to a specially appointed sign. This arrangement has been skilfully placed on metrical record by the poet astronomer, Manilius:

> Lanigerum Pallas, taurum Cytherea tuetur,
> Formosus Phœbus geminos; Cyllenie cancrum,
> Jupiter et cum matre deum regis ipse leonem;
> Spicifera est virgo cereris, fabricataque libra
> Vulcano; pugnax Mavorti scorpius hæret.
> Venantem Diana virum, sed partis equinæ;
> Atque angusta fovet capricorni sidera Vesta;
> Et Jovis adversum Junonis aquarius astrum est;
> Agnoscitque tuos Neptunus in æquore pisces.

The genius of a special wind was also attributed to each of the twelve signs of the Zodiac: Africus was referred to aries; Circius to taurus; Aquilo to gemini; Septentrio to cancer; Thrascias to leo: Agrestes to virgo; Zephyr to libra; Africus to scorpio; Auster to sagittarius (sometimes capricornus); Notus to aquarius; and Eurus to pisces.

Thus was the Universe made, in the cosmic system of the Pythagoreans, to consist essentially of twelve concentric spheres; all of which performed unceasingly their respective allotted motions; and beyond the circumference of the outermost of which was situated the motionless empyreum, the eternal abode of the ineffable deity. The terrestrial portion —the central nucleus or core—of this spherical series, which had been destined for the abode of man, was, as already indicated, formed of the four elemental strata of earth, water, air, and fire; concentrically disposed in order of gravity. Each of the seven planets, in the order above enumerated, was set in the transparent wall of a crystalline sphere, by the diurnal revolution of which it was carried round the central earth. A single crystalline shell was made to function as supporting frame to the whole "heavenly host" of the fixed stars. The rotatory movements of each and all of the series were duly regulated by the investing *primum mobile.*

Being thus placed at the centre of a universe of unthinkable vastness, and very obviously influenced by mysterious invisible powers which were situated in immeasurably remote regions, it is not difficult to fancy how man, as soon as he began to exercise his uniquely characteristic function of *sursum aspicere*, was led to believe in the individual and collective influences of the heavenly host on matters mundane. Also how—aided by the promptings of the unsleeping agency, universal human vanity—he came in time to regard himself as an actual microcosm, a "picture in little," of the immeasurable vastness of which he formed the centre. Radii from every point of the circumference of the *cosmos* met at a central focus in his person. Hence the genesis (and subsequent elaborate development) of the idea of the human *microcosm;* with the presiding influences of the various planets and constellations on the special regions and organs of the human body; on the passions and moral qualities of the mind; and on the whole life pilgrimage and fortunes of the individual. The ancient Egyptian by the banks of his heaven-sent Nile, to whose annual supply of mud he looked for the means of existence, the Chaldæan shepherd on his scorched or storm-swept plain, and the speculative Persian on his inspiring mountain summit,—all studied the mysterious movements of the starry hosts, and all tried to spell out the influences which governed men's chequered course in life. They all saw the continuous struggle between good and evil upon earth, and a corresponding contention between light and darkness in heaven. Heat and cold, storm and calm, pain and pleasure, agitation and rest, were obviously destined to the display of perpetual opposition and contrast. There is, indeed, little reason to be surprised on finding the primitive amateur theologian formulating a fixed belief in the co-existence of the *dual "principles"* of GOOD and EVIL, as the only conceivable explanation of the troubled course of the turbid current of events which furnished the daily, and universal, experience of life. The longer he observed the prevalence of cruelty and injustice upon earth, and the more deeply he pondered on the mystery of their origin, the more he felt constrained to centre his only hopes of bliss on things above, and to nourish the consoling idea of the immortality of the soul. With the course of ages, a notion came to be definitely formulated that everything *sublunar* was essentially and hopelessly bad; that there was no attainable beatitude within the circumference of the sphere of the moon. And there were not wanting in the early ages of Christianity some pessimistically anarchical leaders of thought heretical, who professed to believe that the omnipotent Deity, after he had ejected Lucifer from Heaven for his rebellious pride, granted by way of mollifying grace, permission to that fallen archangel to construct a world of his own; with unlimited power to exercise his untrammeled discretion therein in the management of matters moral and political, as well as physical. Our globe was the product of that license; and the framers and supporters of the hypothesis triumphantly pointed to it as the only one which could satisfactorily account for the facts of the daily experience of human life!

"Spiritual" *emanations* were very naturally suggested to primitive inquirers by observation of the effects of the movements of currents of the invisible air, on and near the surface of the earth; and, more distinctly, perhaps, by noticing the transit of the (beams and) rays of the sun, and the various effects of the same on matters animate and inanimate. These undoubtedly permeated each of the great pagan systems—both theological and philosophical—to which I have already referred a notion of the common central origin of all such spiritual agencies from a great overseeing, and overruling, FIRST CAUSE. In all the grandly mystical systems: of the Hindus, the Chaldæans, and the Egyptians, of Zoroaster, and of Plato, the *anima mundi* was an emanation of the ineffable and unknowable Supreme Power; and the *anima microcosmi* was an offshoot of the *anima mundi.* The messengers (angels) of the Supreme Power descended to the earth from heaven along the *rays of the sun* (or steps of *Jacob's ladder*). The messengers of the Evil Principle, in their turn, tried to make up for limitation of power by excess of activity. Collisions between the representatives of the good and evil principles often took place in the air, and thus were the more sudden and startling of meteorological phenomena usually, if not invariably, produced. The enlistment of human agents was, of course, always carried on with the keenest activity. There was no denying the fact of the existence of large numbers of men of distinctly evil disposition—persons who were, spiritually and physically, inveterate enemies of their kind. And, ever since the occurrence of the fatal episode connected with the earliest use of the forbidden fruit, an idea has widely and strongly prevailed among all the nations and down through all the ages—one which has, I incline to think, influenced the opinions of a vast majority of individuals—that the evil spirit obtains an entrance more easily into the human female form than into that of the male. On this very account, more especially, the number of existing witches has always been far greater than that of the masculine practitioners of sorcery and necromancy. The periodic (menstrual) "uncleanness" of the human female functioned as a most prolific germ in the culture and expansion of the witchcraft doctrine. The peculiarly morbid feeling of repulsion—even abhorrence—which was associated in the minds of "the general," in the centuries which for so very long preceded the emancipation of the weaker sex, and the genesis of the "new woman" and the "suffragette," may be to some extent estimated from the Renaissance data furnished by the (Roman) experience of the celebrated Matthiolus, the "father of modern therapeutics;" and the comment of Aldrovandus, the enthusiastic and encyclopædic natural historian, which thus accounts for the origin of canine rabies: "Cum ipse noverit mulieres, quæ non alia de causa catellos Meliteos alebant, quam vt dum mensibus laborarent, ea excrementa lingerent, quæ concreta pudendis partibus inhærebant, quos canes *cunnilingos* vocant, nec tamen, ob hanc causam, aliquo rabiei periculo agitati sunt"—and from the correspondingly gruesome views and notions which are placed before the reader of the thesaurus of the elder Pliny (Philemon Holland's version):

> Of all liuing creatures a woman hath a flux of bloud euery moneth: and hereupon it is that in her onely there

> are found a false conception called *Mola, i.* a Moone-calfe, that is to say, a lump of flesh without shape, without life, and so hard withal, that vneth a knife will enter and pierce it either with edge or point. Howbeit, a kinde of mouing it hath, and staieth the course of her moneths; and sometime after the manner of a childe indeed, it costeth the woman her life: otherwhiles it waxeth in her belly as she groweth, and ageth with her; now and then also it slippeth and falleth from her with a laske and loosenesse of the guts. Such a thing breeds likewise in the bellies of men, vpon the hardnesse of liuer or spleen, which the Physitions call *Scirrhus, i,* an hard wedge and cake vnder their short-ribs. And such an one had *Oppius Cato* a nobleman of Rome, late Pretour. But to come againe to women, hardly can there be found a thing more monstrous than is that flux & course of theirs. For if during the time of their sickness, they happen to approch or go ouer a vessel of wine, be it neuer so new, it wil presently soure if they touch any standing corne in the field, it wil wither and come to no good. Also, let them in this estate handle grasses, they will die vpon it: the herbes and young buds in a garden if they do but passe by, will catch a blast, and burne away to nothing. Sit they vpon or vnder trees whiles they are in this case, the fruit which hangeth vpon them will fall. Do they but see themselues in a looking glasse, the cleare brightnesse thereof turneth into dimnesse, vpon their very sight. Look they vpon a sword, knife, or any edged toole, bee it neuer so bright, it waxeth duskish, so doth also the liuely hue of yvorie. The very bees in the hiue die. Yron & steele presently take rust, yea and brasse likewise, with a filthy, strong, and poisoned stink, if they lay but hand thereupon. If dogs chance to taste of womens fleures, they run mad therewith; and if they bite anything afterwards, they leaue behinde them such a venome, that the wounds are incurable: nay the very clammy slime Bitumen, which at certaine times of the yere floteth and swimmeth vpon the lake of Sodom, called Asphaltites, in Iury, which otherwise of the owne nature is pliable enough, soft and gentle, and ready to follow what way a man would haue it, cannot be parted and diuided asunder (for by reason of the viscositie, it cleaueth and sticketh like glue, and hangeth all together, pluck as much as a man will at it) but only by a thred that is stained with this venomous bloud: euen the silly Pismires (the least creatures of all others) hath a perceiuance & sence of this poison, as they say: for they cast aside & will no more come to that corn, which they haue found by tast to be infected with this poison. This malady, so venomous and hurtful as it is, followeth a woman stil euery 30 daies; and at 3 moneths end, if it stay so long, it commeth in great abundance. And as there be some women that haue it oftner than once a month, so there are others again that neuer see ought of it. But such lightly are barren, and never bring children. For in very deed, it is the materiall substance of generation: and the mans seed serueth in stead of a runnet to gather it round into a curd: which afterwards in processe of time quickneth and grows to the form of a body; which is the cause that if women with childe haue this flux of the moneths, their children are not long liued, or else they proue feeble, sickly and full of filthie tumours, as Nigidius writeth.

The persistence of these antique views—thus tabulated in a volume of which Sir Thomas Browne has well and truly observed that "there is scarce a popular errour passant in our dayes, which is not either directly expressed, or diductively contained in this worke, which being in the hands of most men, hath proved a powerful occasion of their propagation"—even down to the opening of the nineteenth century, is well shown in the following quotation from an anonymous writer of the latter date:

> Of these the first is menstruous blood, which, how much power it has in sorcery, we will now consider:
>
> First, if it comes over new wine, it will turn it sour; and if it does but touch a vine, it will spoil it for ever; and, by its very touch, it renders all plants and trees barren, and those newly set die; it burns up all the herbs in the garden, and makes the fruit fall from trees; it makes dim the brightness of a looking glass, dulls the edges of knives and razors, dims the beauty of polished ivory, and makes iron rusty; it likewise makes brass rusty, and to smell very strong; by the taste it makes dogs run mad, and being thus mad, if they once bite any one, that wound is incurable; it destroys whole hives of bees and drives them away, if it does but touch them; it makes linen black that is boiled with it; it makes mares cast their foals by touching them with it, and women miscarry; it makes asses barren if they eat of the corn touched by it. The ashes of menstruous clothes cast upon purple garments, that are to be washed, change their colour, and likewise take away the colour of flowers.

But it must be added—in accordance with biographical accuracy and scientific fair play—that the writer of the above sentences recognizes the possession of many redeeming qualities by menstrual blood, for he directly continues his account thereof as follows:

> It also drives away tertian and guartan agues, if it be put into the wool of a black ram, and tied up in a silver bracelet; as also if the soles of the patient's feet be anointed therewith, and especially if it be done by the woman herself, the patient not knowing what she uses. It likewise cures the falling sickness; but most especially it cures them that are afraid of water or drink after they are bitten by a mad dog, if only a menstruous cloth be put under the cup.

Yet, after the enunciation of these encouraging and illuminating therapeutic facts, the author at once relapses into his former pessimistic position, and gives the following valuable information from that gloomy viewpoint—illuminated by a few scintillations of radiant possibilities:

> Likewise, if a menstruous woman shall walk naked, before sunrise, in a field of standing corn, all hurtful things perish; but if after sunrise, the corn withers; also, they are able to expel hail, rain, thunder, and lightnings, more of which Pliny mentions. Know this, that if they happen at the decrease of the moon, they are a much greater poison than in the increase, and yet much greater if they happen between the decrease and change; but if they happen in the eclipse of the sun or moon, they are a most incurable and violent poison. But they are of the greatest force when they happen in the first years of the virginity, for then if they but touch the doorposts of a house no mischief can take effect in it. And some say that the threads of any garment touched therewith cannot be burnt, and if they are cast into a fire it will spread no farther. Also it is noted that the root of piony being given with castor, and smeared over with a menstruous cloth; it certainly cureth the falling sickness. Again, let the stomach of a hart be roasted and to it be put a perfume made with a menstrous cloth; it will make crossbows useless for the killing of any game. The hairs of a menstruous woman, put under dung, breeds serpents, and if they are burnt will drive away serpents with the fume. So great and powerful a poison is in them that they are a poison to poisonous creatures. [! ! !]

The perusal of these extracts proves to every reader the presence, in the opinion of certain foremost leaders of the teaching of wisdom of the past centuries, of a vast magazine of power—potential and actual, destructive and curative—in the menstrual blood. This source of danger and of strength was controllable, at least when under proper supervision, during the period of its natural (physiological) formation and discharge from the body. But when the change of life arrived, and the elimination of this very uncanny mainspring of continuously accumulated power ceased to be carried out as before, the human female became, if evil influence happened to obtain the ascendancy in her person, an agent—or rather, indeed, a reservoir—of the most malevolent and mischievous tendencies and capabilities. Hence the witches of worst repute were always found among females who had passed the menopause.

To the details of mischief which were effected by witches—not only upon human beings but upon the lower animals, and even on plants, there was, as might thus be expected, practically no limit. I have already referred to some of the principal types of disease which were attributed to their influence; further "facts" might, of course, be added without end, though with little increase of general enlightenment. But the perusal of some of the special remedies used by a noted expert of his generation has an illuminating interest in this connection. The famous astrologer, William Lilly, was born three years before Sir Thomas Browne, and died two years before him. His reputation in high places was such as to induce the Dean of Westminster (in 1634) to employ him to use his occult powers for the purpose of discovering hidden treasure in the cloisters of Westminster Abbey. This was in the year just preceding that in which Browne produced his *Religio Medici*. And Lilly obtained for himself a position of influence and credit in the England of his day such as was secured by very few, if by any, of his medical contemporaries. He published his *Christian Astrology* in 1647, the year after the appearance of Browne's *magnum opus*, the *Pseudodoxia epidemica*. This volume contains, among its innumerable gems of seventeenth century wisdom, the following facetted specimen:

> Naturall *Remedies* for WITCHCRAFT.
>
> Having by the Figure discovered and described the Party, either by that Planet who is Lord of the 12th, or posited in the 12th, and doth behold the Lord of the Ascendant with a malicious aspect, you must let one watch the party suspected, when they goe home to their owne house, and presently after before any body goe into the house after him or her, let one pull a handfull of the Thatch, or a Tile that is over the Doore: and if it be a Tile, make a good fire and heat it red hot therein, setting a Trevet over it, then take the parties water, if it be a man, woman or child, and poure it upon the red hot Tile, upon one side first, and then on the other, and againe put the Tile in the fire, and make it extreamly hot, turning it ever and anon, and let no body come into the house in the mean time.
>
> If they be Cattle that are bewitched, take some of the Haire of every one of them, and mix the Haire in faire water, or wet it well, and then lay it under the Tile, the Trevet standing over the Tile: make a lusty fire, turn your Tile off upon the Haire, and stir up the Haire ever and anon: after you have done this by the space of a quarter of an hour, let the fire alone, and when the ashes are cold, bury them in the ground towards that quarter of heaven where the suspected Witch lives.
>
> If the Witch live where there is no Tile but Thatch, then take a great handfull thereof, and wet it in the parties water, or else in common water mixed with some salt, then lay it in the fire, so that it may molter and smother by degrees and in a long time, setting a Trevet over it.
>
> Or else take two new Horse-shooes, heat them red hot, and naile one of them on the threshold of the Door, but quench the other in Urine of the party so Bewitched: then set the Urine over the fire, and put the Horse-shooe in it, setting a Trevet over the Pipkin or Pan wherein the Urine is; make the Urine boyle, with a little salt put into it, and three Horse-nails untill it's almost consumed, *viz.*, the Urine; what is not boyled fully away poure into the fire; keep your Horse-shooe and nailes in a cleane cloth or paper, and use the same manner three severall times; the operation would be farre more effectuall, if you doe these things at the very change or full Moon, or at the very hour of the first or second quarter thereof. If they be Cattle bewitched, you must mix the Haire of their Tailes with the Thatch, and moysten them, being well bound together, and so let them be a long time in the fire consuming. *These are naturall experiments, and work by sympathy, as I have found by severall experiments: I could have prescribed many more, Multa creduntur ratione experientiæ, non quod videntur veræ vi rationis.*

The variety of the theological ways and means of dealing with the sources of witchcraft, and the manifestations thereof, and the lesions produced thereby, are much too multitudinous in their complexity to allow us to dare attempt more than to touch the fringe of the garment thereof. One remarkable aphorism of an amateur in this department of science will probably prove interesting to most appreciative readers: "It is somewhat more difficult to conjure the devil out of one bewitched than out of one possessed, because in the bewitched he is double, in the other single." And when all attempts at exorcism or conjuration had failed, the reasons were copiously supplied—in every case. It is no matter for surprise, too, that the regulation series of efficient reasons was reckoned by the sacred number *seven*: "First, for that the faith of the standers by is naught; secondly, for that theirs that present the party is no better; thirdly, because of the sins of the bewitched; fourthly, for the neglecting of meet remedies; fifthly, for the reverence of virtues going out into others; sixthly, for the purgation; seventhly, for the merit of the party bewitched; . . ."——and it need hardly be added that, with so formidable a barrier of excuses, every failure could be quite effectively defended from the attacks of vulgar inquiry and criticism.

In the epoch making *Discovery of Witchcraft* of Reginald Scot, which was mainly responsible for the trumpeting Royal counterblast of "the British Solomon," there is an extract from *De Fascinatione* of Leonhardus Varus, which is probably worthy the passing attention of the interested reader:

> But this gift and naturall influence of fascination may be increased in man, according to his affections and perturbations; as through anger, feare, love, hate, etc. For by hate (saith Vairus) entereth a fiery inflammation into the eye of men, which, being violently sent out by beames and streames, etc., infect and bewitch those bodies against whom they are opposed. And therefore he saith (in the favour of women) that is the cause that women are oftener found to be witches than men. For (saith he) they have such an unbridled force of fury and concupiscence naturally, that by no means is it possible for them to temper or moderate the same. So as upon every trifling occasion, they (like brute beasts) fix their furious eyes upon the party whom they bewitch. Hereby it cometh to passe, that whereas women have a marvellous fickle nature, what griefe soever happeneth unto them, immediately all peaceablenesse of minde departeth; and they are so troubled with evil humours, that out go their venemous exhalations ingendred thorough their ill-favoured diet; and increased by means of their pernicious excrement, which they expel. Women are also (saith he) monethly filled full of superfluous humours, and with them the melancholike blood boileth; whereof spring vapours, and are carried up, and conveyed through the nostrils and mouth, etc., to the bewitching of whatsoever it meeteth. For they belch up a certaine breath, wherewith they bewitch whomsoever they list. And of all other women, leane, hollow eyed, old, beetlebrowed women (saith he) are the most infectious. Marry he saith that hot, subtil, and thinne bodies are most subject to be bewitched, if they be moist; and all they generally, whose veines, pipes and passages of their bodies are open. And finally he saith, that all beautiful things whatsoever, are soon subject to be bewitched, as namely, goodly young men, faire women, such as are naturally born to be rich, goodly beasts, faire horses, ranke corn, beautiful trees, etc.

This quotation furnishes an excellent summary of the teaching and—to a somewhat more limited degree—the belief of the "learned vulgar" of that age. For the inquiring reader should always remember that there were sceptics in those times, as in every other period (and locality) of civilization, who would never admit or practise the diffusion of their private opinions or hardly earned knowledge to the unlettered mob; which, in the generations that preceded universal education and universal suffrage, was usually governable only by the continuous agency of the fear of something which they could never have explained, or hoped to understand. On this account, I will take the opportunity, in passing, of suggesting that, having regard to such fact (which is now so usually ignored or lost sight of) the methods adopted by the political and theological powers of the remoter centuries were really not so deserving of the voluminous—and platitudinous—censures which have so frequently been heaped upon them by the "thinly" educated *doctrinaires* of recent times.

The popular belief in the reality of such phenomena as those of witchcraft, fascination, demoniacal possession, etc., was, as a mere matter of fact, shared by all the *average* citizens in those bygone generations; with the exception of the small minority who, on adopting such an attitude in our own twentieth century, are promptly labelled as "cranks," but in the more torrid mental atmospheres of Inquisitorial and Puritanical movements were even more swiftly branded as "atheists." In peculiarly troubled times, such as were those of the day and generation in which the author of the *Religio Medici* gave his notable condemnatory evidence as medical expert at a trial of witches, bewildered and tortured humanity has always endeavored to offer an explanation—the only conceivable one—of the deplorable conditions by which they are surrounded, and to which they are subjected, by attributing them to a swelling wave of activity of the indefatigable agents of the Evil Principle. And the present writer would gladly embrace the opportunity of suggesting that it should not disturb the materialistic *equanimitas* of the cocksure "modernist" of the twentieth century to have the cosmic fact indicated: that those strange coincidences even still continue to occur, which tend to keep alive the primitive faith in the occasional interference of the supernatural powers, in regulation of the course of matters mundane. Let the most accomplished astronomer and the most up-to-date geologist proceed, armed with charts and diagrams and lantern slides, to prove to the ruined survivors of the Calabrian peasantry whose earthly all was submerged or wrecked by the great earthquake of 1905, that there was no essential connection between the occurrence of that catastrophe and that of the prefatory solar eclipse which took place some nine days before, and I will confidently promise them that their scientific crusade will prove an absolute failure. One of the specially vivid impressions of my own boyish days is furnished by the recollection of the thrilling word pictures drawn by the devout Catholic peasantry of the West of Ireland: of Donati's great comet, which had formed so portentous a phenomenon on the concavity of the heavenly vault, night after night during the winter of 1858-9. The prophetic reality of its significance was—to them—absolutely proved by the tornado of troubles which overswept the Vatican and its consecrated ruler within a few months after the occurrence of the portent. It was remarked, too, that the combined impression on the glowing wax of the Celtic imagination had proved successfully efficacious in securing for "unrestful" Ireland, throughout 1859, the only year of the nineteenth century during which it was doomed to complete freedom from "agitation"! And, in the winter nights of 1870, when the Prussian siege of Paris was in progress, there were seen in the West of Ireland, on repeated occasions, gorgeously tinted *auroræ,* the streamers of which, radiating—with continuous vibratile movements—from a focal centre at the zenith, actually covered the whole of the visible vault of the sky. No auroral phenomena of corresponding magnitude have been observed since that date, and aged spectators at that time declared with fervor that they had never seen any such before.

The failure of Sir Thomas Browne, to recognize the fallacies of witchcraft faith and doctrine, has been referred to—as ever more, by critical judges self appointed, and furnished with the arrogance as well as the incompetence, which constitute the distinguishing badges of their tribe—as if it were actually a peculiarity of his own personal opinion. The value of such a view must at once be realized by the reader who remembers that some twenty years before the date of the trial at which he figured as an expert witness, the famous "witch finder," Matthew Hopkins, discovered (or invented) no less than sixty witches in the course of one year, and within the limits of a single English county; every one of whom was publicly burned alive at the stake. We may here recall, with a thrill of horror, that the efforts of the Inquisition, in the most active period of its history, yielded results but slender in comparison with those. The gleaning field of the latter body included all Christendom; and, even adopting the figures furnished by the calculations of its most active enemies, it took 150 years to burn 150,000 witches. On the other hand, the Gospel-loving Puritanical movement in Great Britain numbered among the special triumphs of the twenty years (1640-1660) during which it attained, and occupied, its springtide watermark, the execution of some 4,000 witches! And at Leith, in 1664—the year before the Browne witch trial—nine condemned witches were burned together on one occasion; so that the merciful and skeptical Charles II. was not able to extinguish the practice, as he surely felt disposed to do. Sir Matthew Hale, who presided at the Browne trial, was an enthusiastic amateur theologian; and declared that he based his judgment regarding the truth of witchcraft on the direct testimony of Holy Writ. Dr. Joseph Glanvil (1636-1680), one of the major theological luminaries of a generation which produced profound scholars and brilliant theologians, is the most cogent of all writers upon witchcraft, the reality of which he loudly proclaims and unflinchingly champions against all comers; and—be it remembered, in this connection, that—the same author wrote with highly philosophic precision on the *Vanity of Dogmatizing,* and is believed by some to have anticipated Hume's famous *Theory of Causation,* and by others to have prefigured the *electric telegraph!* Henry More (1614-1678), the most accomplished scholar, according to the testimony of many of the best judges, of the English Church in his day; also Ralph Cudworth, who was unquestionably its most profound and most encyclopædic philosopher by far, were both staunch supporters of the orthodox superstition. So was the accomplished divine and classical scholar, Meric Casaubon (1599-1671); and the superlatively stainless and Calvinistic Richard Baxter (1615-1691), the author of the celebrated theological classic, *The Saints' Everlasting Rest!*

No unprejudiced reader. who knows his facts and has studied them with philosophic mind, can deny that one of the most unpleasantly telling arguments against the free access of the reading rabble to the pages of Holy Writ, and the teaching of the equality of values of individual judgment (and of the literal inspiration of versions made hundreds of thousands of years after composition, into languages of remotely different genius and idiomatic expression) may be gathered from the data furnished by the history of witchcraft persecutions. The virulent malignity of the Puritanical pursuit of criminals so "righteously" and gratuitously accused of crimes, which not only had not been committed by them, but had never been—and never could have been—committed by anybody, furnishes the materials of one of the darkest pages in the record of erring and unregenerate humanity. And those "good" people appeared truly to believe that they were but carrying out to the letter the (misinterpreted) Divine behest: "Thou shalt not suffer a witch to live." Perhaps the most unanswerable item of evidence of this fact is arrived at on learning that almost exactly a century after the earthly pilgrimage of Thomas Browne followed that of the mildly saintly John Wesley (1703-1791), the laborious Apostle of Methodism. This relatively nonaggressive exponent of Christianity steadfastly maintained, down to the end of his life, that to give up witchcraft was to give up the Bible. And his avowed views regarding the appropriate treatment, were. it almost goes without saying, correspondingly orthodox.

And not only were the most orthodox, and (professedly) charitable Christian theologians, and the most profoundly learned and logical philosophers, implicit believers in witchcraft and witches, but even the most grave, responsible, and prominently-placed physicians professed, and subscribed to. the same article of faith. In fact, the treatment of the effects of witchcraft, and of possession, was so frequently called for in medical practice that nearly every busy therapeutist had his own favorite *demonagogue*. The great *Herbal* authors who were so richly—sometimes even rankly—productive, during the seventeenth century and part of the eighteenth, are all found to notice plants which had achieved the reputation of special efficacy. Many practitioners, too, employed powerful cathartic and antispasmodic remedies; on the ground of a hypothesis that their activity was accompanied by a specific eliminative power in this direction. Thoner, who was a therapeutic authority of high place in the seventeenth century, extols the action of the *mercurius vitæ* in ridding the human body of preternatural substances which had effected lodgment therein. At the same time, he considers some special local application necessary in order to complete the extraction of the matter in which the *principium seminale* of the sorcery was lodged—such as, for example, the bewitched bread or fruit which had originally been given to the patient. In a case that he had himself successfully treated, and which he has reported with some display of honest pride, the local application employed was a cataplasm "*ex stercore maleficiati*." And Mynsicht, whose famous *elixir* achieved a cosmopolitan reputation which extended over more than one century, cured sundry victims of witchcraft by means of *asafœtida* plaster. Two theories were advanced to account for the success of this application: (1) that the devil considered himself personally insulted by the proximity of an application so popularly loathsome, and abandoned the patient in a paroxysm of scorn for the bad taste of the latter; the only modifying alternative view being that (2) the dark complexioned spirit possessed, in addition to his other perceptive powers, a very responsive nasal apparatus; and was, accordingly, always induced to void the premises under those conditions, but merely on account of the unpleasantness of the odor!

In the light of our supermodernized twentieth century science, it is almost weirdly interesting to peruse the dissertation *De Diavoli potentia in corpore*, by Friedrich Hoffmann, a physician who may be said to have established strong claims on posterity to their recognition as the true Father of the modern theory and practice of medicine. This production was included in the collected edition of his works which was brought out by the author himself in 1747. There the great Teutonic physician accepts in full the popular views of the demonologists; that the facts by which the Satanic power was evidenced were as reliably attested and established as any of those of history—past or present; that the devil notably rules in the atmosphere, where he can raise storms at his pleasure; that he possesses the power of creating insects; and that, in the case of the human organism, he is able to influence the animal spirits, and even the imagination; but still remains unable to decipher our thoughts. And. in course of the discussion of these profound questions, Hoffmann takes the opportunity of displaying his own high estimate of his sable majesty's attainments in the mysteries of natural and physical science, based as they firmly were on his prolonged experience: *summus opticus et physicus, propter diuturnam experientiam!* This extremely earnest—and epoch making—physician paid very special attention to the study of spasmodic diseases; and he explained the genesis of (at least a vast proportion of) the same by the presence of witchcraft influence. He regarded the witches themselves, indeed. very much as passive instruments, or transmitters, of the true demon power. Some of the records of his illustrative cases read quaintly indeed—in this generation of chemical physiology and bacteriological pathology. He tells us, for instance, of a woman who had suffered from severe and continuous headache from the date of her refusal to sell a calf's head to a reputed witch; and professes to entertain no doubt that the suffering was an effect of the exercise of the witch's malignant powers of revenge.

An incident which is specially worthy of prominent commemoration in the history of the progress of human opinion—scientific and theological—is the publication, in 1775, of a volume *De Magia,* specially written in scientific (up to date) defence of the claims of the old and orthodox views of the nature and causation of the phenomena of magic and witchcraft. The author was Antonius de Haen, one of the most prominent physicians of his generation; the pupil of Boerhaave, and high priest of Minerva Medica; who, according to the happy conceit of Professor Osler, with the cooperation of his colleague, Van Swieten, removed the central temple of the worship of their goddess from Leyden to Vienna; and has received the credit of having been the first physician who systematically employed the *clinical thermometer* in the study of fevers and their treatment. The life and work of that author surely prove that he was a man of sound scientific views and progressive principles—at least in many directions—and not a mere fossilized conservative or dreamy mystic.

The fact that the *Royal Society* had been founded in the British metropolis some few years before the famous witch trial in which the author of the *Religio Medici* was the expert witness who contributed so largely and effectively to securing the conviction of two females of an imaginary crime, and their expiation of the guilt thereof by the most horrible of all the methods of carrying out the death sentence which had been devised by vindictive justice, was used by the self-elected *advocatus diaboli* as an argument against his worthiness of a national demonstration, and the erection of a national monument to his honor on the occasion of the approach of his tercentenary anniversary (October 19, 1905). Yet we find mention in the private memoirs and cross references of the period that the "Merry Monarch," under whose genial patronage the Royal Society was first brought into light (in imitation of the corresponding French institution with which he had become acquainted in his prolonged period of exile), and whose dearly bought practical experience had given him an intimacy with the varieties of pretension—social, scientific, and political—which has been accorded to few reigning monarchs, completely nonplussed the collected leaders at one of their early meetings by asking why it was that a dead fish will cause the water of a full vessel to overflow whereas a live one will not? And when some 90 years after the witchcraft trial in which Sir Thomas Browne figured (as all now think) to least advantage, we find that Paul Rolli, F.R.S., in speaking to the communication which he had brought under the (first) notice of that august scientific body, and which actually made *Spontaneous Combustion* an article of orthodox scientific faith—even into our own twentieth century—summarized his views by saying: "After all this I say that a feverish fermentation, or a very strong motion of combustible matters, may rise in the womb of a woman, with an igneous strength that can reduce to ashes the bones, and burn the flesh." This single sentence, I venture to suggest, proves that the *argumentum ad hominem* was never more preposterously applied than in mentioning the contemporary existence of the Royal Society as a proof that Browne was not up to date in his scientific attainments.

In presence of such a cloud of witnesses, who can—with any pretence of fairness—accuse the author of the *Religio Medici* of either cruelty or ignorance?

In drawing towards a close, I will endeavor to summarize the aspects of the facts and opinions glanced over—somewhat after the bird's eye pattern presented to the view of an aviator of the current period. I have placed before the mind's eye of the reader some of the probably most interesting, and subtly arranged and depicted, of the hieroglyphic groupings of mental fancywork, and illustrative creations of the Oriental and Levantine—and most characteristically luxuriant—imagination; by the aid of which contemplative man endeavored, in the long-drawn centuries which preceded the birth of modern science, to puzzle out for himself the solution of the ever present and ever bewildering "riddle of the universe." It had been well recognized that the leavening Principle of Evil, which infected the whole of sublunar space, included within the scope of its influence the mental and moral qualities of all the dwellers on the face of our globe. Plato's first man, in common with the privileged spirits which emanated directly from the Supreme Divinity, had been admitted to the perception and enjoyment of all knowledge. And man's present ignorance but represents an encrusting shell—the product of successive myriads of layers of deposit derived from impure contact. Wherever this contaminating crust comes to be broken off, the original glow of enlightenment is found to reappear; "all knowledge is but remembrance." The ill-mated union of *matter* and *spirit* had produced all the evils of man's physical and spiritual existence.

The spiritual emanations from the omnipotent divine being of the Pythagorean and Platonic systems possessed the power of passing through all forms of matter, without any appreciable opposition whatever. There would almost seem to be some unconscious, although self-inflicted, sarcasm in the adoption of the ἡ πέμπτη οὐσία of the Pythagoreans by modern physicists, as their *"ether;"* and their tortuous endeavors to explain all previously unexplained, or misunderstood, physical phenomena by its agency and mediating influence. And a closely correlated item of satire upon the "modernist" claims of the "march of intellect" in the domain of matters physical, as based upon the evidence of materialistic progress, is the universal adoption of the hypothesis of the *atomic* structure of matter, which is said to have been evolved from the inner consciousness of one Moschus (= Moses, according to Ralph Cudworth, D. D., an authority second to none in the history and lore of ancient philosophic dogma), at a date anteceding that of the Homeric siege of Troy; and was undoubtedly preached and pondered with exquisite subtlety by Democritus and Epicurus, and sung in almost inspired metres by the philosopher poet, the "divine" Lucretius. But the previously "ultimate" atoms having been hopelessly shattered by the fusilade of early twentieth century "radiations," we are now stranded—and in a retrograde direction—on a dumping borderland between the physical and metaphysical domains, throughout which the *radiations* of the former seem almost everywhere to dovetail with the *emanations* of the latter.

The subtle spiritual emanations from the Divine central focus, which were recognized in those grand old philosophic systems, as a matter of course always retained their primordial luminosity till they became obscured by contact with matter. The *anima microcosmi,* which was a derivative of the great central *anima mundi,* was the essentially active agent in the conveying and maintenance of life—with its associated heat and movement—in all the individual members of the whole animal kingdom. It was the "vital spark of heavenly flame," which is so familiar to all readers of Pope, and so seldom understood according to his real meaning. The *flame of life,* according to Plato, was continuously burning in the left ventricle of the heart.

The celebrated reformer, Philip Melanchthon, was in his day thoroughly saturated with the Greek philosophy; and he, accordingly, recognized that the *spiritus vitalis,* which presided over all the characteristic functions of life, with its *essential* activity and *specific* heat production, was continuously generated within the heart during the whole period of animal existence; and from the purest blood, only; necessarily, therefore, in the left side of the organ.

The bond of spirit and matter had been predestined to be ever a more or less galling one. So when death set free the soul, it hastened to fly beyond the limits of the sublunar sphere—when the recording angel offered no special reason to prevent its escape. Some apostles of the Manichæan and allied forms of heresy displayed, indeed, an ingenuity in their speculations in this connection, which was interesting to a very high degree. The recently liberated soul was allowed to pass through the sun's rays, which washed away all adherent traces of earthly staining matter. On escaping as far as the circumference of the sublunar sphere, it regained its primitive luminosity and took up a temporary abode in the moon. From this transitory residence there was a monthly discharge to the sun; hence the succession of the moon's phases! The sun was the blissful abode of the second person of the Trinity; the seat of the throne of the Redeemer—which was evermore surrounded by his attendant hosts of angels. After having passed the judicial scrutiny of the latter, and received the all-saving sanctification of the former, the process of beatification was complete; and the saved soul passed to its eternal abode of bliss in the *lux zodiaca.* Such was the history of the *invisible* and *visible* forms of light, respectively.

In the generation of the author of the *Religio Medici* the atmosphere of learning was, indeed, so thoroughly saturated with those ideas of the spiritual and the supernatural, as almost to exclude the light of the physical and intellectual understanding. Yet a close investigation of the conditions may, in the end, give the materialistic "modernist" more scope for the cultivation of modesty than he seems usually disposed to utilize. If no hypothetical medium is now spoken of as the "invisible" light, it is none the less glaring a fact that the "potential" light of the twentieth century physicist is the same mysterious fluid: the vibrations of which are utilized to account for its transmission to "actual" visibility. And the assumption is quite as completely artificial in the latter case as in the former. The physicist of the present day can no more *prove* his *ethereal* hypothesis of the transmission of light by transverse vibrations than could Plato have proved the emanation of the human soul from the great central reservoir of the Divine essence, and its perpetual drag in the direction of return. The only thing that has been actually established in either case is the formation of a theory adaptable to the explanation of the great bulk of the known facts—*not* of *all.* And now that the *atoms* which had been adopted from a venerable pre-Trojan hypothesis, and so painfully and laboriously made to fit in with the mathematical calculations, and chemical and physical facts of experiment of the evolutionary nineteenth century, have been so badly shattered by the radio-active emanations of the twentieth, we find the hypothetical entities of another imaginative idealist called out to be enrolled as the tenants of the newly formed scientific pigeonholes. There is after all, I have come to fear, almost as much circular as rectilinear movement in the progress of science—even of the most modern type; some of us incline to believe that the proportion is even greater in case of the progress of the human understanding itself. And with this concluding observation, which is by no means intended to convey detraction of the achievements which have been effected by the devoted pioneers of research, and true scientific observation and experiment; or of the attainments which have been laboriously acquired, and results happily secured by the equally devoted members of our own profession—in the skilled application of the same to the alleviation (and prevention) of human physical suffering; I beg to offer my apologies to my overindulgent editor for the "hyperextension" of my encroachment upon the journalistic space and critical attention; and to my overtaxed reader, for my aggravated trespass on his time and patience. My sole excuses are that the healing art has not hitherto been brought to the level of what may be justly called an "exact *science*," and the unquestionable fact—which is far too often and too deliberately ignored—that our most reliable therapeutic data, even in this our own twentieth century, are of the almost purely empirical type; so that our *knowledge* of medicine (properly so called), with all its methods and its powers, is really *historical;* while the well known specimen of medical practitioner, who takes his knowledge and the application thereof from average textbook and advertisement teaching and enunciation, can never attain to the standard level of his more accomplished, and always less pretentious and less selfconfident, brother; who has learned by laborious study what degree of soundness can justly be attributed to the respective individual opinions which have for generations been reiterated with an assumption of gospel authority in the pages of our medical textbooks. The case of the opinion of the accomplished and high minded author of the *Religio Medici* on the crucial question of witchcraft should surely teach all of us a lesson in the genuine humility which always characterizes the devoted seeker for truth, of which there surely exists no truer or nobler representative than the ideal physician.

34 York Street.

Our Readers' Discussions.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

CV.—How do you perform circumcision? (Closed December 15, 1910.)

CVI.—How do you treat obesity? (Answers due not later than January 16, 1911.)

CVII.—How do you treat acute otitis media? (Answers due not later than February 15, 1911.)

Whoever answers one of these questions in the manner most satisfactory to the editor and his advisers will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable no one answer to contain more than six hundred words.*

All persons will be entitled to compete for the prize whether subscribers or not. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL. OUR READERS ARE ASKED TO SUGGEST TOPICS FOR DISCUSSION.

The prize of $25 for the best essay submitted in answer to question CIV has been awarded to Dr. John W. Powers, of Burlington, Wisconsin, whose article appears below.

PRIZE QUESTION CIV.

THE TECHNIQUE FOR PERFORMING VACCINATION.

By JOHN W. POWERS, M. D.,
Burlington, Wisconsin.

The careless manner in which vaccination is too often done has brought about a popular prejudice against the procedure which, if not checked, will lead to serious consequences.

In order to secure an ideal result in vaccination, several factors are absolutely essential: The virus must be active and free from other pathogenic organisms. A proper site should be selected. The field of operation, the hands of the operator, and the instrument used must be surgically clean. The operation must be skilfully done. The resultant abrasion must be protected and have proper after care.

There is a dearth of vaccine preparations on the market, but the preparation I find most satisfactory is the virus which comes put up in small, aseptically sealed, capillary tubes. These tubes contain not only the lymph, but also the glycerinated pulp. The specific principle of vaccine is unknown, but whatever it is, it exists chiefly in the epidermal lesions, and the pulp therefore contains a more potent and concentrated virus than the lymph. Furthermore, the pulp may be purified with glycerin, whereas the lymph, dried on points, is not amenable to such treatment. Vaccine prepared in this way is also practically sterile. All vaccines contain a certain number of harmless bacteria which are exceedingly hard to destroy. The dry points usually contain a larger number of bacteria than the ripened glycerinated virus, and are therefore less desirable. Glycerinated virus is active in ninety-eight per cent. of cases, and much of that which is inert is so because it is not properly handled in trade. Therefore I am careful to get vaccine that has not been in stock long, and has been kept in a cool place.

The site to be selected for vaccinating should not be over a muscle, as by its movement it will irritate the resulting lesion. The skin over the insertion of the deltoid muscle on the left arm is the place I select, or when preferred on the leg, I insert on the inner side of the knee, over the internal condyle of the femur.

In preparing this site, I scrub vigorously with soap and hot water, rinse, bathe with alcohol, and rinse with sterile hot water, covering it with a dry piece of sterile gauze until ready to proceed. After cleansing my hands in the same manner, and immersing in a 1 in 4,000 solution of bichloride of mercury, I sterilize my lancet, by holding it in the Bunsen flame for one half minute.

Stretching the skin over the proposed site of inoculation, I scrape away the epidermis over two areas, each one half inch square. Then I make a number of very shallow crisscross incisions, being careful not to cause any flow of blood. I make two of these abrasions, because two insertions are more surely protective than one. After the serum has exuded, I break off the ends from the small tubes and expel the virus upon the scarified surface. Allowing this to dry for ten or fifteen minutes, I apply a single piece of sterile gauze and a celluloid shield. I dress this every other day, applying fresh gauze and cleaning the shield. If this does not "take" within twelve days, I revaccinate. I vaccinate infants as early as two or three months old; and advise parents to have children revaccinated when they start to go to school and every four or five years thereafter, or oftener, if the disease is prevalent.

Dr. C. E. Bortner, of Hanover, Pa., says:

Selection of the virus. It goes without saying at the present time that humanized virus should not be used. The vast majority of sad accidents in the transmission of disease occurred in the days af "arm to arm" vaccination. Of the animal lymphs, authorities now agree that the "glycerinated" is unquestionably the more efficient and the less likely to be contaminated by accidental bacteria. The use of glycerin in conjunction with vaccine virus was first suggested many years ago as a means of diluting lymph, thereby gaining in quantity of the reagent without impairing its vaccinal efficacy. It was not until 1891 that Copeman announced that glycerin had a more important function, in that by its use it was possible to secure a lymph which should be absolutely free of accidental germs. Even though the streptococcus of erysipelas has been originally present in the vaccine material, it is rapidly killed by the germicidal action of the glycerin. The only disadvantage of the glycerinated lymph is a thing of the past.

Over confidence in the ability of the glycerin to kill bacteria led some few manufacturers to be careless in its preparation. This defect has been corrected, so that now physicians are assured of a pure article in all markets.

The operation. Needless to say, this should be conducted with attention to every detail of cleanliness. To begin with, the patient should, after taking a full bath, don a set of absolutely clean underwear. The latter is a detail more frequently honored in the breach than the observance, especially by those who stand most in need of it. Prior to the operation the site of the proposed wound should be thoroughly scrubbed with soap and water, rinsed, and dried, and again scrubbed with alcohol. For purpose of scarifying, the operator may use the point of a scalpel or a needle. The place selected for the operation is over the insertion of the deltoid muscle on the left arm. In the case of female subjects, it is often desirable, for fashionable reasons, to vaccinate on the outer aspect of the thigh just above the knee. The abrasions made should be very superficial, never sufficient to draw blood. The scarified surface should cover a space of about half an inch square. If, perchance, any bleeding has taken place the operator should wait patiently until it has ceased. The virus should then be well rubbed in, plenty of time being taken for this procedure. If the vaccination has been performed in the physician's office and it is necessary or desirable for him to economize time, the wound may be covered by a pressed linen shield and held in place by adhesive strips. Otherwise the virus may be permitted to dry by exposure to the air for half an hour.

The subsequent care of the wound should be the same as we would give any other lesion of like severity. To permit it to go neglected, as is done in three fourths or more of the cases, is defying Providence and courting disaster.

I believe that the shield should be removed after the first twenty-four hours and a sterile (not antiseptic) gauze compress applied and retained *in situ* by adhesive straps. The shield as a permanent dressing is bad. The pressure it makes causes local congestion, and after the vaccination has "taken" it retains the discharges, favors decomposition, and breeds infections. The aseptic gauze dressing has no disadvantage beyond adhering to the sore. This may be obviated in a great measure by the application of some simple unguent.

In cases where the areola is angry looking and the redness and swelling severe, I paint it once a day with compound tincture of benzoin. This is soothing and protects the surface from friction. If complications occur they should be treated on surgical principles. Understand that sepsis is not the result of vaccination, but of subsequent mismanagement.

Time for vaccination should be when there is an epidemic, at once, no matter what the age of the unvaccinated is. The only contraindication is ill health. If circumstances are such that one may make a selection, the fourth or fifth month is generally regarded as the most suitable. *Every individual without exception should be vaccinated during childhood.* Revaccination should take place not later than every ten years.

The "raspberry excrescence" is sometimes mistaken for a take, it being somewhat similar. Every one has encountered subjects alleged to be insusceptible to vaccination. The majority of these are the results of insufficient effort or poor operative technique, attempts at securing a successful result having been abandoned after two or three efforts. In most of the cases of true insusceptibility the individual is immuned against smallpox as well. It is the part of wisdom for these insusceptible individuals to regard themselves as liable to take smallpox in cases of exposure. Hence, they should in epidemic times surround themselves with all possible protection against exposure to infection.

In conclusion, I wish to state that good hygiene and nourishing diet should never be forgotten. I have not given anything in reference to the course of the vaccinal lesions which does not come under our topic.

Dr. L. H. Munger, of Winona, Minn., remarks:

1. Choice of location. Ordinarily the left arm. In left handed people, the right arm. Some females prefer the thigh.

2. Preparation. I wash the skin thoroughly with soap and water, then with alcohol, lastly with pure water, and dry the skin.

3. Operation. Grasping the limb in such a manner as to put the skin at the site of operation on a moderate tension, with a sterile needle I very gently scratch off the cuticle on a spot or spots about one eighth inch in diameter and one half to three fourths inch apart. In young babies and occasionally in older persons I prepare only one spot. But ordinarily, except in very young infants, I prepare three spots. I scratch off the epidermis until the moist, red, true skin appears, but try to avoid any bleeding, even so much as a single drop. I do the scratching so gently that often a baby goes through the operation without a whimper. Having prepared the spot or spots, I empty the contents of a capillary tube of virus onto the prepared surfaces, and with the same needle that I used in the preparation, I rub the virus into the true skin. I then place a shield over the field of operation, fasten it in place with adhesive strips, and direct that it be left for a few hours as I fix it. After that the shield may be removed or not at the pleasure of the patient. But I give very positive and explicit directions that when the vesicle appears it must be very carefully protected so that it shall never be broken, or if it accidentally is broken, it must be dressed with surgical cleanliness to prevent infection. When this technique has been followed, I have never seen a "bad sore" from vaccination.

(*To be continued.*)

Therapeutical Notes.

Intramuscular Injections of Menthol and Guaiacol in Bronchitis and Tuberculosis.—In the treatment of bronchitis, pulmonary gangrene and tuberculosis Berliner (*Berliner klinische Wochenschrift;* through *Nouveaux remèdes,* December 8, 1910) recommends the intramuscular injection of a solution of menthol and eucalyptol in castor oil of the following composition:

Menthol, ...ʒii;
Eucalyptol, ...ʒv;
Castor oil, ...℥i.
Ft. solutio.

Two c.c. of the solution are injected into the gluteal muscles three to four times a week.

The author considers this form of medication curative in the primary and secondary stages of tuberculosis.

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NEW YORK, SATURDAY, DECEMBER 31, 1910.

THE PREVENTION OF VENEREAL DISEASES IN NEW YORK.

The expediency of attempting to limit the spread of venereal diseases by the compulsory physical examination of prostitutes has often been discussed, but in New York the discussion has lately become acute, so to speak, in consequence of certain legislation authorizing such examination. As regards this provision, the law has become temporarily inoperative as the result of a judicial decision; the question now is in regard to the policy of making the suspension permanent. Certain organizations of women have protested against paragraph 79 of the Page law, as it is commonly called, and have argued in favor of its repeal. There has been some medical argument in favor of the law as it stands; for example, in our issue for December 3d we published an article by Dr. Frederic Bierhoff in which the provisions of the law were upheld. In our present issue we print an article vigorously opposing them, by Dr. Maude Glasgow. Last week the matter was discussed at a meeting of the American Society of Sanitary and Moral Prophylaxis.

The overwhelming weight of opinion elicited seems to be that paragraph 79 is futile and that it ought to be repealed. This is in accord with conclusions which have many times been arrived at elsewhere, and we must say that it appears to us to be abundantly supported by the facts. It may be conceded that the sequestration of a prostitute discovered to be the subject of communicable venereal disease will for the time being do away with that particular woman's power to spread the disease, but what can be said of a woman certified to be free from disease? Granting that the examiner is correct—and he would have to be extraordinarily expert for his decision to be absolutely depended on—what guarantee has the community, or what great probability is there, for that matter, that the certified woman will not straightway cohabit with some man who will deposit infectious material in her vagina? In such a case the woman herself may even escape infection, but how many men may she not expose to it pending her next examination?

As regards the vast and heterogeneous army of clandestine prostitutes, we cannot help thinking that they are more dangerous than the regulars. They know less of the risks which they take, and they are more ignorant as to taking care of themselves. Under any usual system of regulation, too, they would be less likely than the avowed prostitutes to be subjected to physical examination. They go about ordinary vocations in the daytime, using towels and utensils which serve also for their healthy and innocent associates, and in many instances they sleep habitually with their little sisters. Moreover, they corrupt other girls who are thrown together with them in their daily work; this is especially true of factory girls.

It is doubtless true that more men than women convey venereal disease, but they do not impart it to such a large number of individuals. As a rule they are more blameworthy than the women, because they indulge in indiscriminate copulation although perfectly aware that they are diseased. Practically no man has gonorrhœa, chancroid, or chancre without knowing it, whereas, as Dr. Glasgow well points out, many a prostitute is entirely ignorant of her disease. But we cannot seize upon every man in the street and subject him to a physical examination, though keepers of brothels of the better class might insist upon such an examination of their patrons, and in some instances, as we have been informed, this is actually done. As to requiring a certificate of freedom from communicable disease as a condition of granting a marriage license, this, we fear, would lead to a terrible increase in the number of illegitimate births—surely a state of things not to be incurred if we can by any means escape it.

There remains, then, only moral and hygienic teaching. Much may be hoped of this, but its progress will necessarily be slow. It will be years yet before we can convince our youth that it is not rather a manly thing to have had gonorrhœa, but let us not falter in the endeavor. The Society of Sanitary and Moral Prophylaxis has already done a good deal of effective work in this direction, and it well deserves the cooperation of everybody who has the welfare of mankind at heart.

THE GENESIS OF THE PROSTITUTE.

Presumably a considerable step would be taken in the effort to restrict venereal disease if we could materially reduce the number of prostitutes. Such an endeavor may be well nigh hopeless, but it seems essential to any measure of success that we should acquaint ourselves with the causes which lead women into a life of prostitution. To begin with, there are some women who appear to have been born without a moral sense. They are vile from childhood. While they are still little girls they show sexual degradation, enticing boys to cohabit with them and poisoning the minds of other girls. It is they who become not only prostitutes but also pickpockets, workers of the badger game, blackmailers, and the consorts if not the accomplices of the most dangerous criminals. We can hardly expect to get rid of such creatures, though there may be some system of training by which, if they are taken in hand early enough, they may be taught the error of their ways. Fortunately such girls are not common.

On the other hand, there are women who have entered upon a career of degradation by no choice of their own, but in consequence of the cruelty of others. Among them are those who are reputed to have been seduced and abandoned. It may be doubted if seduction in the strict sense of the term is common. The seducer, as we understand it, goes about his villainous work in a cold blooded way, though generally with a pretense of love. Such a man is very likely to be understood and foiled by a girl of any sense, unless she allows herself to be so compromised by situations of his contriving, that, however innocent she may still be, he is enabled to hold over her the threat of publicity. Even then the girl has one resource, that of confiding in an honorable man capable of giving her persecutor a drubbing, but certainly it is hard for her to take such a course, and too often she yields.

Occasionally it happens that genuine lovers allow themselves to get so excited in each other's company that almost before they are aware of it actual coitus has been accomplished. When that has happened a man of the right stamp will acknowledge to himself that the girl's error was committed out of love for him, and a wedding is hastened. But not all men are so constituted; there are those who take the view that the girl would have been equally accommodating to some other fellow. Such a man abandons his sweetheart, and she is very likely to take up with the life of a courtesan, though there are many women who under such circumstances have elected to live out their days as spinsters, and very sweet women they turn out to be, for it is conscience that has kept them away from matrimony. Then there are the passionate explosions that take place in a carriage on the way home from a late supper at which too much wine has been taken, both parties being quite free from any premeditated wrong intention. This sort of thing may be guarded against by always insisting on the presence of a suitable chaperon. When once it has occurred, however, the girl's reputation is at the man's mercy and she is apt to be sacrificed.

There are said to be men so despicable as to employ working girls at starvation wages and plainly intimate to them that they must expect to eke out a living with what they can pick up on the streets at night. This debasing hint is keenly resented at first, but unfortunately other girls employed in the place are only too apt to scoff at the novice's scruples, and grim want gnaws away what remains of them, so that the brothel or the pavement sooner or later becomes the chief if not the only scene of the poor girl's activities. Men who treat their employees in this way are fearfully guilty, but they are too coarse to be made to see it and there seems to be no way of coercing them.

Many roads, then, lead to a life of prostitution. Can we not block some of them? The great obstacles that have always stood in the way are the unforgiving attitude of the parents of an erring girl and that of the great majority of virtuous women. Associated with them is the stigma of illegitimate maternity which so often plays a part. It is probably useless to try to induce parents to relent, but we think we see signs that obloquy in the community at large is gradually to cease as the portion of girls who are far more sinned against than sinning.

THE RECLAMATION OF THE PROSTITUTE.

If, as seems probable, society should succeed to some extent in curtailing the accession of women to the ranks of prostitution, we may perhaps deplete them further by the regeneration of some women who have already entered them. We are well aware that it is deemed almost impossible to reclaim a prostitute, and past failures in the attempt seem at first sight to justify the conclusion. But those failures may have been due, not to intrinsic difficulties of an insurmountable nature, but rather to the adoption of inadequate methods. The present attitude of virtuous women toward their erring sisters, as shown by the alacrity with which they have endeavored to remove from prostitutes the burden of practically the entire blame for the great prevalence of venereal diseases, appears to show an awakening to duty from which much may be expected.

It is women alone, we think, who can lift the prostitute from her degradation; men have essayed to do so over and over again, but always, so far as we are aware, have met with failure. We are not prepared to indicate any details of such a philanthropic work; those we leave to the women who will have to carry them out. We may, however, perhaps be permitted to mention a few generalities. In the first place, there should be nothing institutional about the undertaking, else opposition on the part of those to be reclaimed will be aroused at once. The operations should be of individual initiative and conducted as if the subjects had never been anything else than reputable members of society. Honorable employment must be obtained for them of course, but it is of prime importance, it seems to us, that they should never be reminded of their past career. We earnestly hope that some means will be found to reclaim them in considerable numbers.

THE POSITION OF VACCINE THERAPY.

The opinion of the medical profession as a whole wavers somewhat as to vaccine therapy. There are those who believe in it, those who are skeptical, and those who openly deny its efficacy. Recently, both from England and from Germany, encouraging news has come with respect to the benefits accruing from antityphoid vaccination. Experiments on a large scale in the British and German armies seem to show conclusively that beneficial protective results have come from vaccination against typhoid fever.

In the American army the outcome of the use of the method has been attended with most satisfactory results. It appears to have been proved beyond a doubt that the procedure is harmless and effective.

In the *Practitioner* for December, Dr. E. von Offenheim endeavors to correct certain misconceptions which have arisen concerning the method. Referring to one reproach, the lack of confirmatory statistics, von Offenheim points out that far too much importance is usually paid to statistics, and that, as every one knows, these are easily made up to prove a point that it is desired to prove. It is said that vaccine therapy often fails and is consequently regarded with distrust, on account of the ignorance of the general practitioner of the proper technique of the method. Further, according to von Offenheim, medical students and physicians are not sufficiently trained in the principles of vaccine therapy, so that a very large number of practitioners do not know which cases are suitable for such treatment and which are not. The argument is made that when suitable cases are treated in a scientific manner vaccine therapy fulfils all that has been alleged for it by its earnest advocates. Of course, this is not to say that vaccine therapy has not its limitations, for it most obviously has; von Offenheim, however, lays down this axiom, that all infections of which the organisms are known or can be found and can be grown *in vitro* are amenable to vaccine therapy provided there are no uncontrollable autoinoculations and the lesion is accessible to the blood stream.

There is little doubt that the principle of vaccine therapy is right from the scientific point of view, and, so far as typhoid fever is concerned, such treatment is effective. As was said before, its protective value against typhoid fever has been clearly shown in the recent report of the surgeon general of the United States Army, in which it is stated that among the unvaccinated of the army the case rate of typhoid fever in a thousand was 4.11, and the case rate among the vaccinated .26.

THE MARKETING OF THE EHRLICH REMEDY.

For many weeks past we have been flooded with letters, a large proportion of them from laymen, asking how "606" can be obtained. In our replies we have given such information as we were able to get. So far as we are at present informed, the preparation will be for sale in New York some time in January, but the date may again be postponed. We believe that it will not be sold indiscriminately, for it is to be handled by a reputable house. We feel very sure that it will not be furnished to persons who are not physicians, and we doubt if it will be delivered to members of the medical profession other than those concerning whom there is reason to believe that they will follow directions strictly, both as to the administration of the drug and as to the selection of cases for its employment. It is too potent for harm to warrant any other method of dealing with it.

CLINICAL FACILITIES FOR MEDICAL STUDENTS.

The affiliation of the Presbyterian Hospital with the College of Physicians and Surgeons of Columbia University which is said to have been arranged will undoubtedly prove of benefit to both the college and the hospital. With the vast mass of clinical material available in such a centre of population as New York the student should be given opportunities for the bedside study of disease and its treatment during his term of study at college, which would make of him a competent practitioner by the time he had received his degree. The new arrangement between the hospital and the college will go far toward using this clinical material to better advantage. The affiliation is an interesting manifestation of what might be termed the centripetal force in medical education, a force which has manifested itself by a decrease in the number of colleges teaching medicine, an increase in the equipment and facilities of the remaining institutions, and a relative decrease in the number of graduates receiving the degree. The result of this movement has been a decided improvement in the acquirements of the men who are being sent out from the colleges to practise medicine.

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News Items.

Hospital Benefit.—The directors of the New York Throat, Nose, and Lung Hospital have received the sum of $2,050 for their tuberculosis department and night camp as a result of a bridge tournament recently given at the Plaza Hotel, and organized through the kindness of Mr. Frederick Townsend Martin.

The Medical Society of the County of Kings, N. Y.—At the one hundred and twelfth regular meeting of the Section in Pædiatrics of this society, held on Wednesday evening, December 28th, the programme included the following papers: Diagnosis, Prophylaxis, and Treatment of Pertussis, by Dr. M. W. Henry; Conversive and Adaptive Infant Feeding, by Dr. William A. Northridge.

The Buffalo Academy of Medicine.—At a stated meeting of the Buffalo Academy of Medicine, held on Tuesday evening, December 27th, under the auspices of the Section in Obstetrics and Gynæcology, Dr. John Osborne Polak, of Brooklyn, read a paper entitled When shall We Operate in Puerperal Septic Infection and what can we expect from Vaccines? Dr. Earl P. Lathrop opened the discussion.

The Fall River, Mass., Medical Society.—At the annual meeting of this society, held on Wednesday, December 14th, officers for 1911 were elected as follows: President, Dr. P. E. Truesdale; vice-president, Dr. J. F. Lowney; secretary, Dr. E. A. McCarthy; treasurer, Dr. D. R. Ryder; librarian, Dr. G. L. Richards; assistant librarian, Dr. A. C. McCrae; executive committee, Dr. J. H. Gifford, Dr. A. Fecteau.

The Cleveland, Ohio, Academy of Medicine.—At the recent annual meeting of this academy the following officers were elected for the ensuing year: President, Dr. Walter B. Laffer; vice-president, Dr. W. W. Holliday; secretary, Dr. O. A. Weber; treasurer, Dr. J. C. Darby; trustees, Dr. W. T. Corlett and Dr. C. E. Ford. This academy has now seven hundred members, and is the largest medical organization in the State.

Open Air Classes for Consumptive Children.—An open air class room for consumptive children and a diet kitchen are to be erected on the roof of the two story public baths and gymnasium building in the rear of Hudson Park, north of Carmine Street, New York. The plans which the city architects have filed call for an expenditure of $6,000. About fifty tuberculous children can be accommodated in the class room.

The Presbyterian Hospital Affiliated with Columbia University.—Through the gift of an endowment fund of $1,300,000 for educational and scientific work to the Presbyterian Hospital, an affiliation between that institution and the College of Physicians and Surgeons, the Medical Department of Columbia University, has been made possible. The gift was made through Mr. Edward S. Harkness, but the name of the original donor is withheld. Mr. Harkness will himself add a new surgical pavilion and a complete laboratory for advanced research work.

Syracuse, N. Y., Academy of Medicine.—Officers for 1911 were elected as follows, at the annual meeting of the academy, held on Tuesday evening, December 20th: Dr. A. B. Breese, president; Dr. F. H. Flaherty, vice-president; Dr. W. D. Alsever, secretary; Dr. G. C. Feigel, treasurer; Dr. A. E. Larkin, Dr. A. S. Hotaling, and Dr. G. S. Britten, council members; Dr. H. B. Doust, Dr. J. C. Palmer, and Dr. H. S. Steensland, trustees. Nine new members were admitted, which raised the total membership of the academy to two hundred.

The Metropolitan Life Insurance Company's Tuberculosis Sanatorium.—Official approval has been given to the application of the Metropolitan Life Insurance Company for the establishment at Mount McGregor, Saratoga County, N. Y., of a hospital for the treatment of its employees afflicted with tuberculosis. The residents of Saratoga Springs raised an objection to the establishment of a tuberculosis sanatorium at this place, but it was the opinion of Health Commissioner Porter that the institution would not be a menace to health.

Public Lectures on Oral Hygiene.—Dr. H. L. Wheeler, of New York, and Dr. W. A. White, of Phelps, N. Y., have been appointed dental consultants and special lecturers on oral hygiene of the New York State Department of Health, by Health Commissioner Eugene H. Porter. The duties assigned to Dr. Wheeler and Dr. White comprise the giving of public lectures on the subject of oral hygiene and the care of the teeth, and the consulting with local health boards and school authorities with regard to starting the inspection of the teeth of school children and the opening of free dental clinics.

The Medical Society of the County of Erie, N. Y.—At the annual meeting of this society, held in Buffalo on Monday, December 19th, Dr. Daniel V. McClure was elected president Other officers elected were: First vice-president, Dr. Thomas H. McKee; secretary, Dr. Franklin C. Gram; treasurer, Dr. A. T. Lytle; board of censors, Dr. J. H. Grant, Dr. Francis E. Fronczak, Dr. A. G. Bennett, Dr. G. L. Brown, Dr. Lawrence H. Hendee; delegates, Dr. John H. Pryor, Dr. F. C. Busch, Dr. Edward Clark, Dr. George J. Eckel, Dr. Eli H. Long; chairmen of committees—legislation, Dr. F. Park Lewis; public health, Dr. Henry R. Hopkins; membership, Dr. Charles A. Wall.

The Journal of Biological Chemistry.—Announcement is made by the publishers of this journal that, owing to the death of Dr. Christian A. Herter, editor in chief, and one of the founders of the journal, that there will be a reorganization of the editorial staff in the near future, but in the mean time the journal will be published as usual. A corporation, which consisted of Dr. Herter and four others, organized some time ago at the suggestion of Dr. Herter, will assume full charge of the journal, and will continue its publication without interruption. The publication office of the journal will remain at 819 Madison Avenue, and manuscripts may either be sent there or to Professor A. N. Richards, Medical Department of the University of Pennsylvania, Philadelphia.

The East Side Physicians' Association.—At a regular meeting of this association, held in the Café Boulevard, New York, on Thursday evening, December 22d, the following officers were elected for the year 1911: Dr. I. Seth Hirsch, president; Dr. Sigmund Epstein, first vice-president; Dr. Charles Herrman, second vice-president; Dr. Harry G. Watson, 78 Irving Place, secretary; Dr. Hermann C. Frauenthal, treasurer; Dr. William S. Gottheil, Dr. Robert Abrahams, Dr. A. E. Isaacs, trustees; Dr. Maximilian Lewson, Dr. Armin Nettle, Dr. Zelik Sharfir, Dr. J. Goldstein, Dr. Morris Cisin, committee on admissions; Dr. George Dow Scott, chairman, committee on ethics; Dr. S. W. Schapira, chairman on ways and means.

Personal.—Dr. James Tyson, of Philadelphia, was elected president of Rush Hospital, at the annual election held on December 20th.

Dr. F. F. Wesbrook, of Minneapolis, dean of the college of medicine of the University of Minnesota, has resigned as director of the laboratories of the State Board of Health. The vacancy created by his resignation will be filled at the January 10th meeting of the board.

Dr. J. William White, who resigned recently as professor of surgery in the Medical Department of the University of Pennsylvania, was presented with a grandfather's clock by the third and fourth year students of the university, on Tuesday, December 20th, the day on which he gave his last lecture as a member of the faculty.

The Medical Society of the County of Niagara, N. Y., met in annual session in Lockport recently and elected the following officers: President, Dr. Walter A. Scott, of Niagara Falls; secretary, Dr. J. H. Miller, of Niagara Falls; reelected; treasurer, Dr. F. T. Cramer, of Lockport.

The Michigan State Association for the Prevention and Relief of Tuberculosis met in annual session in Grand Rapids, on Friday, December 9th, and elected the following officers for the ensuing year: President, Dr. A. S. Warthin, of the University of Michigan medical faculty; first vice-president, Dr. Guy L. Kiefer, of Detroit; second vice-president, Dr. E. T. Abrams, of Dollar Bay; secretary, Miss Carol Walton, of Ann Arbor; treasurer, Dr. H. J. Hartz, of Detroit.

The North Texas Medical Association.—The sixty-second semiannual meeting of this association was held in Dallas on Tuesday, Wednesday, and Thursday, December 13th, 14th, and 15th. The meeting was largely attended and was one of the most successful in the history of the organization. McKinney was selected as the place for holding the June meeting of the association. The following officers were elected: President, Dr. C. A. Gray, of Bonham; vice-president, Dr. W. G. Harris, of Plano; treasurer, Dr. K. H. Beall, of Fort Worth; secretary, Dr. H. Leslie Moore, of Dallas.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Department of Health for the following statement of new cases and deaths reported for the two weeks ending December 24, 1910:

	December 17th.		December 24th.	
	Cases.	Deaths.	Cases.	Deaths.
Tuberculosis pulmonalis	612	151	540	195
Diphtheria and croup	269	23	236	27
Measles	180	5	167	4
Scarlet fever	253	14	268	8
Smallpox	..	..	..	..
Varicella	133	..	127	..
Typhoid fever	63	9	48	12
Whooping cough	78	5	64	8
Cerebrospinal meningitis	8	8	4	4
Total	1,596	215	1,454	258

The Health of Philadelphia.—During the week ending November 26, 1910, the following cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Philadelphia: Typhoid fever, 29 cases, 4 deaths; scarlet fever, 49 cases, 6 deaths; chickenpox, 42 cases, 0 deaths; diphtheria, 64 cases, 19 deaths; measles, 64 cases, 0 deaths; whooping cough, 11 cases 4 deaths; pulmonary tuberculosis 92 cases, 49 deaths; pneumonia, 46 cases, 63 deaths; erysipelas, 6 cases, 1 death; mumps, 11 cases, 0 deaths; infantile paralysis, 3 cases, 0 deaths; cerebrospinal meningitis, 1 case, 0 deaths; puerperal fever, 3 cases, 0 deaths; tetanus, 1 case, 1 death. There were 5 deaths from tuberculosis other than that of the lungs, and 21 from diarrhœal diseases under two years of age. There were 39 stillbirths: 21 males and 18 females. The deaths of children under five years of age numbered 134, of whom 85 were under one year of age. The deaths from all causes, exclusive of stillbirths, numbered 498, in an estimated population of 1,598,400, corresponding to an annual death rate of 16.20 in a thousand of population.

The Health of Chicago.—During the week ending December 17, 1910, the following new cases of and deaths from transmissible diseases were reported to the Department of Health of the City of Chicago: Typhoid fever, 34 cases, 10 deaths; measles, 111 cases, 0 deaths; smallpox, 0 cases, 0 deaths; whooping cough, 10 cases, 2 deaths; scarlet fever, 163 cases, 14 deaths; diphtheria, 497 cases, 22 deaths; chickenpox, 91 cases, 0 deaths; tuberculosis, 135 cases, 61 deaths; pneumonia, 83 cases, 138 deaths. There were 3 cases of German measles, 1 of cerebrospinal fever, and 27 cases of contagious diseases of minor importance, making the total 1,157, as compared with 1,289 for the preceding week. The deaths under two years of age from diarrhœal diseases numbered 34, and there were 31 deaths from congenital defects and accidents. The total deaths of children under five years of age numbered 165, of whom 111 were under one year of age. The total deaths from all causes, exclusive of stillbirths, numbered 655, corresponding to an annual death rate of 15.6 in a thousand of population, as compared with a rate of 14.4 for the preceding week and 14.9 for the corresponding period last year.

The Medical Society of the County of Rensselaer.—Over two hundred physicians from Troy and vicinity attended the one hundred and fourth annual meeting of this society, which was held in Troy on Thursday evening, December 15th. The principal features of the programme were addresses by Dr. William S. Gottheil and Dr. Theodore C. Janeway, of New York. The subject of Dr. Gottheil's address was The Therapeutic Value of Ehrlich's "606." Dr. Janeway spoke on Blood Pressure and Its Importance as a Diagnostic and Prognostic Medium in Cases of Cardiovascular Diseases. The following officers were elected: President, Dr. M. Keenan; vice-president, Dr. R. H. Irish; secretary, Dr. J. H. F. Coughlin; treasurer, Dr. O. F. Kinloch; censors, Dr. J. A. Barnes and Dr. J. H. Flynn; delegates to the State society, Dr. J. B. Harvie and Dr. William Kirk; delegate to third district branch, Dr. Hiram Elliott.

The Society of Hospital Internes of New York City held its first clinical meeting at St. Luke's Hospital, on December 19th. An interesting programme was presented, followed by a general discussion, which was opened by Dr. R. Hoffman, house physician at Mount Sinai Hospital. Dr. Nathaniel Bowditch Potter, visiting physician at the City Hospital, the originator of the idea of organization among hospital internes, delivered an able address on the purposes, scope, and advantages of the society. The meeting was very well attended, there being present representatives from St. Luke's, Roosevelt, New York, City, Postgraduate, Bellevue, and Mt. Sinai Hospitals. The next meeting will be held at Roosevelt Hospital in January, the exact date not yet determined, at which meeting the Committee on Constitution will read its report and the society will be duly and permanently organized. Internes of all New York hospitals are cordially invited to be present.

Vital Statistics of New York.—During the week ending December 17, 1910, the deaths from all causes reported to the Department of Health of the City of New York numbered 1,537, corresponding to an annual death rate of 16.69 in a thousand of population, as compared with a rate of 17.70 for the corresponding week in 1909. The annual death rate for the week in each of the five boroughs was as follows: Manhattan, 16.78; the Bronx, 15.67; Brooklyn, 17.14; Queens, 14.11; Richmond, 19.89. There were 113 stillbirths. The deaths of children under five years of age numbered 351, of whom 231 were under one year of age. The deaths from diarrhœal diseases under five years of age numbered 38; over five years of age, 43. There were 151 deaths from pulmonary tuberculosis, 153 from pneumonia, 87 from bronchopneumonia, 120 from Bright's disease, 168 from organic heart diseases, and 81 from congenital debility and malformations. There were 11 deaths from suicide, 1 from homicide, and 56 due to accidents. Nine hundred and eighty-one marriages and 2,322 births were recorded during the week.

Society Meetings for the Coming Week:

MONDAY, *January 2d.*—German Medical Society of the City of New York; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine; Practitioners' Club, Newark, N. J.; Hartford, Conn., Medical Society; Hornell, N. Y., Medical Society.

TUESDAY, *January 3d.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society (annual); Buffalo Academy of Medicine (Section in Surgery); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson County, N. J., Medical Association (Jersey City); Medical Association of Troy and Vicinity (annual); Long Island, N. Y., Medical Society; Bridgeport, Conn., Medical Association.

WEDNESDAY, *January 4th.*—Psychiatrical Society of New York; Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; Elmira, N. Y., Academy of Medicine.

THURSDAY, *January 5th.*—New York Academy of Medicine; Dansville, N. Y., Medical Association.

FRIDAY, *January 6th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn, N. Y.; Manhattan Clinical Society, New York; Practitioners' Society of New York.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

December 22, 1910.

1. Care and Management of the Tabetic Bladder. 1. Diagnosis, By J. DELLINGER BARNEY.
2. Bilharziasis. Report of a Case with Appendicitis. Literature since 1904, By C. GUY LANE.
3. Tuberculosis among the Philippine Scouts (Native Troops) of the United States Army, By ISAAC W. BREWER.

1. **Diagnosis of Tabetic Bladder.**—Barney remarks that trabeculation of the bladder in tabes is found in more than eighty per cent. of cases, and may occur before any symptom or other sign of vesical disturbance. In tabetic bladders it is found in the fundus and side walls only, in typical cases. It is more delicate and regular than that seen with mechanical obstruction. It is probable that it is due to a primary detrusor hypertrophy. Residual urine is found in more than seventy per cent. of cases, often before any symptoms begin. In over fifty per cent. of all cases the urine is infected. Cystoscopy is generally a painless procedure, a fact which is of some diagnostic value. Urinary disturbances, variable in character, are observed in over ninety per cent. of all patients with tabes.

2. **Bilharziasis.**—Lane reports a case of intestinal and genitourinary bilharziasis with terminal spines on all the ova seen; complicated with an acute appendicitis, with operation and recovery, sections of the appendix showing many bilharzia ova in the wall. His review of the reported cases brings out the fact that there are only five undoubted cases of the South African bilharzia hæmatobia among them. In the last five years, more evidence has been advanced for the skin infection theory. Investigation shows that the lateral spined ova may belong to one species of bilharzia and the terminal spined to another.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 24, 1910.

1. The Importance of a Low Protein Diet in Chronic Nephritis, By H. D. ARNOLD.
2. Appendicitis in Childhood, with a Report on 500 Cases, By H. C. DEAVER.
3. Persistent Patency of the Ductus Arteriosus, with Stenosis of the Isthmus of the Aorta, By KATE CAMPBELL MEAD.
4. Simplified Operation for Chalazion, By ROBERT SCOTT LAMB.
5. Sodium Cacodylate in Syphilis, By A. J. CAFFREY.
6. Trapezius Transplantation in the Treatment of Deltoid Paralysis, By DEAN D. LEWIS.
7. Congenital Dislocation of the Shoulder Joint, By VICTOR F. HUNTLEY.
8. Sporotrichosis in America, By RICHARD L. SUTTON.
9. Conservative Surgery of the Pelvic Organs and the Lower Abdominal Wall, By FLOYD W. MCRAE.
10. The Diagnosis and Treatment of Chronic Intestinal Indigestion in Children, By SAMUEL M. HAMILL and KENNETH D. BLACKFAN.
11. Nitrous Oxide and Oxygen Anæsthesia, By WILLIAM D. HAGGARD.
12. Anæsthesia in Traumatic Surgery, By GASTON TORRANCE.
13. The Comparative Danger of Ethyl Chloride as an Antiseptic, By HORATIO J. WOOD.
14. Prevention of Hæmorrhage in Pulmonary Tuberculosis by the Administration of Autogenous Vaccines, By ROSWELL T. PETTIT.
15. Tincture of Iodine for the Umbilical Cord, By JOSEPH S. LEWIS.
16. A Simple Method for Measurement of Blood Cells, By PHILIP ATLEE SHEAFF.
17. A Case of Hairy Tongue, By M. LEON.

2. **Appendicitis in Childhood.**—Deaver remarks that appendicitis in childhood occurs with increasing frequency from birth to puberty, and is more common in males. It runs a rapid and severe course in children more often than in adults. There is less tendency to the formation of strictures, but fæcal concretions are more often found. Enteric fever, intestinal catarrh, and influenza may predispose to appendicitis. Other infectious or contagious diseases and nasopharyngeal troubles are hardly to be considered as ætiological factors. In infants the symptoms of acute appendicitis are often scanty, irregular, and misleading. Infantile appendicitis is more frequent than is generally believed, or than statistics show. In older children even more regularly than in adults, acute attacks occur suddenly and stormily. Chronic appendicitis represents a focus of chronic autotoxæmia, with all its attending evils. All cases of abdominal trouble in children should be regarded as appendicitis until proved otherwise. Distinctive diagnosis must be made between appendicitis and intestinal catarrh or worms, right sided pneumonia or sacroiliac disease, ovarian cyst twisted on its pedicle, mesenteric cysts, cystitis, and rectal abscess. The prognosis in acute appendicitis is favorable, if the case is received early and if the appendix is removed early. If the patient is operated on within the first twenty-four hours, the mortality is practically nil. After this time the prognosis rapidly becomes worse. In chronic appendicitis an acute attack with perforative appendicitis is always to be feared. In intraappendicular inflammation the appendix with the entire diseased tissue can be removed with nothing but benefit to the patient. Nonoperative treatment is indicated in cases of localizing abscess with diffuse peritonitis. Opium and purgatives are absolutely contraindicated. Cathartics must never be given unless it is absolutely certain that appendicular inflammation is absent. Operation is even more suitable for children than for adults. Postoperative treatment is highly important. The Fowler position must not be maintained for more than thirty-six hours in drainage cases, lest intestinal obstruction develops. Intestinal obstruction is ushered in by sudden, severe pain, becoming paroxysmal, and by nausea, spitting, and vomiting. Later symptoms arise in consequence of toxic peritonitis, the result of intestinal obstruction. The temperature and pulse are of but little significance in these cases. In the presence of numerous adhesions ileocolostomy is the best procedure. Secondary abscess must be carefully watched for. It is revealed by a rise and continued elevation of temperature, with high leucocyte count and local signs. Contagious diseases must be recognized at once. Drainage is to be employed only when the exudate is purulent or in large quantity. By its presence, it produces adhesions and predisposes to intestinal obstruction.

Glass tubes may be broken or plugged by omentum. Rubber tubes are valuable for their pliability. Gauze drains do good service at first, but later retard drainage. A wet dressing is the best for absorption.

10. **Treatment of Chronic Intestinal Indigestion in Children.**—Hamill and Blackfan say that hygienic measures in chronic intestinal indigestion in children are very important. Life in the open air, for its stimulating effect on the circulation and general toning effect, must be insisted on, and the sleeping rooms must be cool and ventilated through wide open windows. Properly regulated exercise is important, but this should be largely in the open air and always short of fatigue. Children must be required to eat slowly and masticate their food thoroughly, the common habit of bolting food to get away to school or to games being one of the causes of this condition. A period of rest should intervene between the taking of food and indulgence in active exercise. Very little, if any, physical exercise should be permitted after the evening meal. Long hours of sleep obtained by early retiring are essential. The skin of these children is usually dry and inactive. It must be stimulated to do its work as an organ of elimination by the use of daily baths, rubbing, and inunctions, preferably with olive oil. The kidneys must be kept active by the free use of water, which will also contribute to the lessening of constipation when it exists. Regularity in the evacuation of the bowels is necessary, especially in the presence of constipation. The child must be guarded against too close consideration of its symptoms, a result which is often brought about by undue anxiety on the part of the parents. Its environments must be cheerful and free of gloom. It must be relieved from all occupations which are depressing, especially from overwork in school. Defective conditions in the teeth must be corrected and disturbing adenoids or tonsils removed, but only after the treatment has been continued long enough to bring about some improvement in the general health, and then by quick operations. The nature of the diet depends to a large extent on the character of the indigestion. This can only be determined by a careful study of the stools. If any one element of the diet has been badly handled, it must be withdrawn from the dietary, temporarily at least. Generally speaking, such patients will do better in the beginning on a very much restricted diet, restricted even beyond the caloric needs in the individual case. One of the commonest errors in the treatment is the tendency to overcome the poor nutrition by full feeding. Obviously such a course is comparable only to adding fuel to the flames. These children are already the victims of too much food, and what their digestions need is not increased work, but rest. Usually the diet can be gradually advanced until a general well rounded diet equal to the needs of the individual child has been reached. The heaviest meal should be given in the middle of the day, and the evening meal should be very light, as these children rarely sleep quietly on a full stomach. The use of drugs in this condition represents the least important part of the treatment. There is no specific, and, therefore, whatever drugs are given must be directed to the relief of certain symptoms.

MEDICAL RECORD

December 24, 1910.

1. Neurology in Zurich. Von Monakoff's New Theory of Brain Localization; Jung's Psychanalysis and Interpretation of Dreams, By E. W. Scripture.
2. Immunity Reactions as Products of Natural Selection, By R. G. Eccles.
3. The Probable Duration of Life, By A. H. Stewart.
4. Further Notes on the Treatment of Paralysis Agitans with Parathyreoid Gland, By William N. Berkeley.
5. Another Case of Pyloric Obstruction, By Alexander Goldman.
6. A Simple Clinical Method for Measuring the Diameter of the Pupil, By Tom A. Williams.

4. **Treatment of Paralysis Agitans with Parathyreoid Extract.**—Berkeley refers to his previous papers, in which he considered the question whether paralysis agitans is due to some chronic disorder or disease of the parathyreoid glands. He says: Paralysis agitans has all the marks of a chronic toxæmia; the symptoms following parathyreoidectomy are remarkably like those of paralysis agitans; in cases of myxœdema and exophthalmic goitre paralysis agitans has not infrequently occurred as a complication or sequela; of fourteen reported autopsies on paralysis agitans, two by Erdheim and nine by R. L. Thompson showed negative parathyreoid glands, but two by C. D. Camp and one by himself showed distinct pathological changes; and lastly, a remarkable percentage of cases of paralysis agitans treated with properly identified fresh gland, or a properly made extract, have been greatly benefited. His first patients were treated with commercial parathyreoid gland. This worked well in a few cases, but was found so variable and uncertain in its action that it had to be given up. He next tried a preparation of properly identified gland rubbed up in the crude fresh state to a dry powder with milk sugar. This was distinctly better, but still seemed to be variable and unstable. Later on he tried a nucleoproteid solution of the parathyreoid made up by Beebe's method and preserved with a few drops of chloroform in the bottom of each bottle. This has still further raised the percentage and degree of improvement, but it precipitates rapidly, and is very susceptible to damage from temperature changes over 5° C., therefore hardly admitting of transportation to any great distance. His latest process, devised some months ago, and giving great satisfaction to five or six of his patients who had not done well on other preparations, is this: The nucleoproteid extraction process (Beebe's method) is adhered to generally, but all the preliminary steps are hurried, and the precipitated nucleoproteid is not redissolved, but quickly dried in a draught of cold air; so that within eight or ten hours after the warm glands leave the bullock a minute amount of smooth yellow powder is obtained which stands physiological tests admirably, is stable, easily handled, and does not require a freezing temperature for its preservation (though for safety's sake it is recommended to keep it on ice). The powder is rubbed up with milk sugar as a menstruum and is dispensed in sealed and dated bottles of sixty capsules (an average month's supply). Each capsule contains one fiftieth of a grain of parathyreoid nucleoproteid. The aver-

age dose is two for each day—sometimes less than this when the patient is sensitive to the action of the remedy. It will give satisfaction not only in Parkinson's disease, but also in almost any form of tetany where the stomach can retain food. Otherwise a sterile hypodermic preparation of the nucleoproteid must be used. In paralysis agitans there are no special contraindications, though some patients complain of "nervousness," inability to sit still, and an aggravation of their habitual constipation after a few days' dosage. Nothing is necessary in these cases except to diminish the dose and increase again more slowly. Little benefit can be expected of a satisfactory character except from small doses continued over a long period of time—from three months to a year. He has treated in consultation and in his own practice sixty patients, of these between sixty and sixty-five per cent. who have given the remedy a fair trial have spoken favorably of it and have continued the treatment. More than a dozen, who began three or four years ago, have greatly improved and are now only uncomfortable when they are without the medicine. The author concludes that with such a percentage of benefited cases as this there seems no longer any reasonable doubt of the ætiological relation between the disease and the remedy. One or two cases in the hands of medical friends or correspondents appear to be almost cured, though of such a disease in a patient of advancing years a "cure" is always to be spoken of with reserve.

BRITISH MEDICAL JOURNAL

December 17, 1910.

1. A Plea for Graduation in Laryngootology on a Broad Basis, By P. Watson Williams.
2. Some Points in the Diagnosis and Localization of Intracranial Tumors, By J. S. Risien Russell.
3. The Treatment of Gastric and Duodenal Ulcer, By E. C. Hort.
4. An Unusual Case of Toxic Dermatitis, with Remarks on Symmetrical Eruptions, By George Pernet.
5. Variation among Bacteria, By W. James Wilson.
6. The Therapeutic Advantages of Using Mercury in the Colloidal Form, By G. Arbour Stephens.
7. The Ætiology of Iritis, By W. M. Beaumont.
8. The Normal Orthograde Posture, By Robert Henry Scanes-Spicer.

3. Treatment of Gastric and Duodenal Ulcer.—Hort gives a review of the history of the treatment of gastric and duodenal ulcers: Until comparatively recent years the treatment of gastric and duodenal ulcer, both acute and chronic, has been entirely medical. Medical treatment, until toward the end of the last century, may be summed up in the words "rest and starvation," both for acute ulcers and for chronic. All gradations in rest and starvation were observed, according to the needs of the individual case, from absolute rest for many weeks or months with the merest pittance of food administered by the bowel, to less restricted movement and the administration by the mouth of nutriment mainly of a liquid nature. As improvement set in, as it often did, a gradual return to active life and more satisfying diet was allowed, and the seal of professional approval was set on an almost universal practice. To a large extent the same method of treatment, and the same satisfaction with the results obtained, prevail to-day. Gradually, however, it began to be seen that confidence in the time honored method of treatment by rest and starvation for all cases alike was seriously misplaced. Not only did many patients fail to respond to the treatment, but others considered as cured were found. either during life or on autopsy, not to have been cured; or, again, patients in whom temporary cure was apparently an actual fact repeatedly relapsed. In consequence it came to be realized, though by no means generally, that starvation was not essential to the production of cure, and that the small nutrient enemata, measured in ounces, previously given could be safely replaced by nutrient rectal injections measured in pints. The food absorptive power of the large bowel was, however, much overestimated, and the results were not materially improved. Tentatively the experiment was made of increasing the amount of food by the mouth, and it was found that food could safely be given in larger quantities, and of higher nutritive value, than had previously been held wise or safe. The Lenhartz treatment was widely tried, and, though the results were not strikingly superior to those of the older method, the treatment had a great educational value in demonstrating how dangerous and unnecessary the starvation inseparable from rectal feeding was. The medical world was beginning to appreciate the fact that rest, starvation or semistarvation, and liquids were not the ideal treatment for all cases of ulcer, their surgical *confrères* began to claim the stomach and duodenum as their own. They soon were able to show that by excision, or for choice by short circuiting, with or without simultaneous obliteration of the pyloric orifice, brilliant results could in many cases be obtained, expressed in total relief of symptoms and relative permanence of cure. This not unnaturally gave place to increased confidence, followed by the somewhat rash assertion that, for chronic duodenal cases at least, operation was the only rational treatment once diagnosis was sure. The position, therefore, to-day is that while in some quarters medical treatment by rest and starvation is giving place to rest and semistarvation, in others both are giving way to the somewhat insistent claims of modern surgery. The author is an advocate of the serum and dry protein treatment which he devised about three years ago. His object is, first, to give mainly protein food in solid form which will saturate the digestive secretions which are often, in cases of ulcer, not only superacid but hyperpeptic; second, to give the food in as small a bulk as possible. consistent with high nutritive value. The object of the diet is, to avoid stasis, fermentation, flatulence, to promote rapid and easy digestion, and to relieve pain. Finally, to treat not the ulcer by administration of carbonates, bismuth, etc., but to treat the condition which gives rise to ulcer. In practice the important practical point emerges that as the general condition improves, so does the local in the majority of cases. Cases that do not improve, owing to the lesion being cut off from the lymph stream by thickening of floor and sides of the ulcer sufficiently to make cure impossible by these means, are best turned over to the surgeon.

8. Normal Orthograde Posture.—Scanes-Spicer gives as normal orthograde posture, the following: The centre of gravity of the head is vertically over the centre of the base of support. The vertical plumb line joining these points bisects the median transverse occipito condyloid axis, and also the intercotyloid axis, passing through also the centre of gravity of the mass made up of the trunk and upper limbs. The centre of gravity of the head, that of the trunk, and the centre of the base of support, are actively distanced as much as possible from each other by fullest possible extension of the vertical axis in which these points lie with each inbreath until the extension becomes automatic and unconscious. This posture should be the basis of all physical education for the young. It is the ideal we should seek for every child, the one we should endeavor to get stereotyped by growth in form and structure, the one to which each child should automatically return after action or relaxation. The subject trained thus has an easy and graceful carriage, a straight back, well poised head, a raised, expanded, and mobile thorax well distanced from the pelvis, a flat abdomen, and all the internal organs in constant correct position for best work. The postures permitted and taught by some physical culturists with retracted head, stiff neck, protruded abdomen, hollowed back, and bent knees, do not comply with this definition, and are absolute caricatures of the normal erect posture, and directly produce deformity and disease. Moreover, the normal erect posture is the fundamental essential for all efficient respiration, correct voice production, and speaking. Lastly, the influence of the normal erect posture in the prevention and treatment of disease is of a potency as yet but barely suspected.

LANCET

December 17, 1910.

1. The Aftermath of Eye Strain, By SYDNEY STEPHENSON.
2. The Specific Diagnosis of Pulmonary Tuberculosis, By A. C. INMAN.
3. Note on Tuberculous Meningitis, with Especial Reference to the Invasion Symptoms when the Disease Occurs in Adults, By W. B. WARRINGTON.
4. The Ætiology of Beriberi, By HENRY FRASER and A. T. STANTON.
5. Case of Primary Carcinoma of the Appendix Vermiformis, By ALEX. MILLS KENNEDY.

2. **Specific Diagnosis of Pulmonary Tuberculosis.**—Inman remarks that in the diagnosis of early pulmonary tuberculosis the recent methods of concentration (antiformin) should always be employed for the exposition of tubercle bacilli in the sputum and fæces. The difficulty of interpreting the results of the various tuberculin tests seriously limits their value in the diagnosis of active pulmonary tuberculosis. A positive opsonic index test is of undoubted value in the diagnosis of active pulmonary tuberculosis. A negative opsonic index test must be taken with reserve. The interpretation of the result rests with the clinician, who can take into consideration all the additional factors in the diagnosis of the case.

4. **Ætiology of Beriberi.**—Fraser and Stanton add to their former report on ætiology of beriberi, which appeared in the *Lancet* of February 13, 1910, and was reviewed in the *New York Medical Journal* of March 6, 1910, p. 504. The authors think that white polished rice when forming the staple of the diet in man has been shown to cause beriberi. Such white polished rice when fed to fowls produces in them a disease closely analogous to beriberi in man. This reaction has been found in their present and previous researches, as a test of the beriberi producing power of a given rice when it forms the staple of a diet in man. The addition of rice polishings to a diet of white rice is an effective preventive of the development of polyneuritis in fowls. Rice polishings comprise from eight to ten per cent. by weight of the original grain. The substances contained in polishings which are effective in preventing polyneuritis are soluble in 0.3 per cent. hydrochloric acid, and are not precipitated from the solution on the addition of ninety-five per cent. alcohol in quantity sufficient to make the resulting mixture of proof spirit strength. These substances comprise sixteen per cent., or less, by weight of rice polishings, or 1.6 per cent., or less, by weight of the original unpolished rice grain. The fats which are contained in rice polishings in comparative abundance have been proved of no importance in preventing polyneuritis. Phosphorus compounds equal to eighty-five per cent. of the total phosphorus content have been proved to be unimportant in preventing polyneuritis.

Book Notices.

[*We publish full lists of books received, but we acknowledge no obligation to review them all. Nevertheless, so far as space permits, we review those in which we think our readers are likely to be interested.*]

The Health of the City. By HOLLIS GODFREY, Author of *An Elementary Chemistry*, etc. Boston and New York: Houghton, Mifflin Company, 1910. Pp. xvi-372.

Eight of the ten chapters that constitute this volume have been published in the *Atlantic Monthly*, and the work represents some four years of personal investigations of the health problems of the city dweller. The author makes no pretense of comprehensive treatment, but aims to present in nontechnical English the more important facts that are known about the actual harm or harmlessness to the people of the city of such familiar matters as air, water, wastes, food, housing, and noise, giving an account of those civic conditions that are working evil and telling of some of the organized movements that are making for civic improvement.

There is a good bibliography that gives reference to volumes that may be consulted if the reader wishes more complete information on any subject, and the effective presentation of each topic makes the volume one that is worth the careful reading of all who are interested in the important problems of urban welfare.

Radiumtherapy. By Dr. LOUIS WICKHAM, médecin de Saint-Lazare, ancien chef de clinique dermatologique de la Faculté de Paris, lauréat de l'Académie de médecine, et Dr. DEGRAIS, chef de laboratoire à l'Hôpital Saint-Louis, lauréat de l'Académie de médecine. Translated by S. ERNEST DORE, M. A., M. D. (Cantab.), M. R. C. P. With an Introduction by Sir MALCOLM MORRIS, K. C. V. O. Illustrated with Twenty Colored Plates and Seventy-two Figures in the ext. New York: Funk & Wagnalls Company, 1910. Pp. xx-306.

Few if any physicians have had greater experience in the therapeutic uses of the remarkable substance discovered by Professor and Madame Curie than Dr. Wickham, and the profession in general will welcome this record of his experience. He approached the investigation of the therapeutic value of radium in a true scientific spirit, with the purpose of determining its value as a remedial agent.

An introduction recites the physics and chemistry of radium, a powerful source of energy, manifested in the form of emanation and rays. Emanation can be employed in the form of a gas or for the production of induced radioactivity. Radiation comes from the salt itself, and the important questions are discussed as to the method of application that will give homogeneity of the radioactive output, a maximum quantity of output, the possibility of measuring the radioactivity easily and accurately, and the resistance to wear and tear of the surface of application. The methods of determining the measurement and dose are most important, as the radioactive energy is peculiar to radiumtherapy and distinguishes it from other physiotherapeutic agents. Its originality and specificity are due to the activity of both the x and b rays, and to the great power of penetration possessed by the radiations.

That part of the volume devoted to clinical therapeutics is prefaced by an interesting chapter on reaction. The authors maintain that radium is suitable not only for small, slowly developing cancerous growths, but also for large, rapidly spreading malignant ulcers; they acknowledge that they have not been successful always, but maintain that their results compare favorably with those of other methods. They find that there seems to be a selective action in the treatment of cheloid, and excellent results have been obtained in the treatment of nævi and inoperable vascular tumors. They have not found any selective action in lupus and other forms of cutaneous tuberculous disease, though improvement follows treatment.

It has shown itself to be of value in the treatment of pruritus, the various forms of neuralgia, inflammatory pains in joints, chronic lichenoid forms of eczema, psoriasis, and other prurigenous affections of the skin. They believe it has a great future in gynæcology.

A Handbook of the Surgery of Children. By E. Kirmisson, Professor in the University of Paris, Surgeon to the Hospital for Sick Children, etc. Translated by J. Keogh Murphy, M. C. (Cantab.), F. R. C. S., Surgeon Miller General Hospital for South East London, etc. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xii-822. (Price, $7.)

The translator believed that this volume would be of value to surgeons and physicians in English speaking countries, because it represented the opinions of a clinician of great experience and also the teachings of the French school generally. Where the latter forms a departure from accepted methods, a footnote explanation or addition has been included.

The author states that his aim has been to write something that will be useful both to the medical student who is anxious to acquire sound principles for the practice of his profession and to the practitioner who must conserve his time as much as possible. So he has omitted all history, theory, ætiology, and pathological anatomy, and has emphasized symptoms, diagnosis, and treatment. Experience teaches that among the most important things in infantile surgery are malformations and diseases connected with the locomotor apparatus, and to a minor degree appendicular inflammation, mastoiditis, amygdalitis, adenoids, retropharyngeal abscess, empyema, intussusception, and prolapse and polypi of the rectum; so these conditions are discussed in proportion to their clinical importance.

Directions for Using the Physician's Pocket Account Book and Practical Advice for Professional Success. By J. J. Taylor, M. D. Copyright, 1909. Philadelphia: The Medical Council, 1910. Pp. 212.

The special feature of this book is a system of accounts arranged so that the state of an account can be ascertained without any posting. It contains also practical directions for making out bills and for collections and gives a good review of the legal side of such matters as the statute of limitations, a form for wills, dying declarations, infant baptism, etc. The book appears in two sizes, one, the pocket account book, with 212 pages, for $1.00, and the other, of desk size, with 400 pages, for $5.00.

Fractures and Their Treatment. By J. Hogarth Pringle, M. B. (Ed.), F. R. C. S. (Eng.), Glasgow. London: Henry Frowde (Oxford University Press) and Hodder & Stoughton, 1910. Pp. xii-384. (Price, $5.50.)

The result of the insurance of workmen against injuries and the more general use of the x ray are factors that, the author believes, have led to a greatly increased activity in the study of fractures and to a very large amount of clinical and experimental investigation. In consequence new types of fracture have been brought to light, and the treatment of these injuries receives greater attention than formerly.

Within as brief a compass as possible an account is given of the mechanisms by which the various fractures are produced and of certain methods of treating these injuries that have given the best results in the author's experience. We note with interest the author's commendation of Hodgen's splint, one of the best means of treatment of fracture of the femur that there are and one that is too little used in this country. The methods of treatment commend themselves as practical, and the text is well illustrated and admirably printed.

Biology. General and Medical. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia, etc. With 160 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910. Pp. 440. (Price, $1.75.)

It has been the author's aim to acquaint the reader of this book with the peculiar nature and interesting reactions of living matter and to help him trace it to its probable beginnings and follow it through its multifarious differentiations to its highest complexity. And he has so considered the problem as to show that man is no separate entity, apart from the world of living things, but is a unit in the general scheme of nature and subject to the same laws that apply throughout the universe.

As so many of the subjects treated are of a controversial nature, in the present state of biological science, the author presents what are known to be facts and important theories, and gives no expression of personal opinion in favor of one or the other side of the question. As he says, medical science is a branch of biology, and most of its problems are biological in a way, so the volume is of peculiar interest both to students and to physicians.

Œdema. A Study of the Physiology and the Pathology of Water Absorption by the Living Organism. By Martin H. Fischer, Professor of Pathology in the Oakland School of Medicine, Oakland, California. The 1909 Nathan Lewis Hatfield Prize Essay of the College of Physicians of Philadelphia. Republished with the Consent of the Board of Trustees from the Transactions of the College. New York: John Wiley & Sons, 1910. Pp. 209.

This monograph was awarded the Hatfield prize by the College of Physicians of Philadelphia, and embodies the author's researches into the causation of œdema, a phase of the greater problem of why protoplasm holds any water at all, and why it holds under normal circumstances so nearly constant an amount. By a series of experiments the author shows that the cause of œdema resides in the tissues themselves, which become œdematous, not because water is forced into them, but because changes take place in them whereby they are enabled to absorb water from any available source. Œdema is induced whenever, in the presence of an adequate supply of water, the affinity of the colloids of the tissues for water is increased above what is called normal. The accumulation of acids within the tissues brought about either through their abnormal production or through the inadequate removal of those normally produced in the tissues is chiefly responsible for this increase in the affinity of the colloids for water, though the possibility of explaining at least some of the increased affinity for water through the production or accumulation of substances that affect the colloids in a way similar to acids or through the conversion of colloids having but little affinity for water into those that have a greater affinity must be borne in mind. He finds that the normal urinary secretion is dependent upon an adequate oxygen supply to the cells that constitute the parenchyma of the kidney. Any interference with this oxygen supply leads to a decrease in urinary secretion, even to the point of absolute and permanent stoppage. In consequence of a particularly favorable oxygen supply to the kidneys the secretion of urine may be increased above that ordinarily considered normal.

MEDICOLITERARY NOTES.

It looks as if some day the relations between patient, masseur, nurse, and physician might differ greatly from those now existing. Perhaps it will at first become *infra dig.* for the physician to touch the patient; later he will not see him at all, but make his diagnosis from reports furnished by the nurse and the laboratory worker. A stenographer will take the family and personal history. The diagnosis made, the physician will telephone it to the physiologicochemical laboratory. There the proper formula will be worked out on paper, the procedures indicated will be carried out, and a young man, a trained specialist in hypodermic injections, will proceed to the bedside and administer the remedy. As soon as the febrile reaction has subsided, all professional attendants may withdraw and the patient may be safely left to the care of his relatives.

It seems as if the trend of modern pathology was toward the study of disease as a practically unvarying entity and the patient himself becoming more and more a negligible factor. This is all wrong according to old fashioned ideas, which found in each new patient an entirely new problem, the disease, whatever it might be, complicated with all sorts of factors of heredity, surroundings, diet, habits, occupation, and, not least, diathesis. Take the reports on "606." An enormous number of cases are cited and the percentage of successes and failures is stated precisely as if the patients were a lot of lay figures. There is not a word of the interesting and, to the old viewpoint, important history of each individual, with the thousand and one personal peculiarities that would once upon a time have modified the prescription as each separate patient passed through the hands of the practitioner. The gouty and sedentary philosopher and the active young athlete get the same dose. We cannot help thinking that *Spirochæta pallida* is more discriminating and does not hesitate to modify its *modus vivendi* according to the kind of patient by whom it is being entertained. We are not bemoaning the older ways, which were very probably all wrong, but the contrast between them and the up to date, sure fire styles is marked and disturbing to any old time physician who loved his patients and their families.

* * *

We were always impressed with the distinguished newspaper physician who posed as a homœopathic specialist and made a dignified and imposing figure as he reassured the public with uplifted arm in his electrotype portraits. And now we hear he has been fined heavily at the instance of some jealous medical society for selling cane sugar globules as a powerful remedy for asthma, dyspepsia, and other ills. We ask with pathos, Whom can we trust? Think of the pained bewilderment of the editors of such papers as permitted themselves to be persuaded, perchance against their better judgment, of the genuineness of the therapeutical pretensions of this openhanded advertiser.

* * *

The *Delineator* announces in its January issue that it has found 2,789 dear old ladies who acknowledge having read the first number, published forty years ago. Alice Lindsay Webb tells How to Remove Spots. Lady Macbeth's formula, Out Damned Spot, is not cited. The Child's Rescue Campaign offers four more children for adoption, good looking and interesting youngsters, to judge by their pictures. It is gratifying to know that the demand for children by childless couples is beginning to exceed the supply. We do not know if the authorities would consider a physician, with his constant absences from home, as a proper foster parent or not.

* * *

There has been some discussion regarding the propriety of the flavoring and sophistication of tobacco. The only pure tobacco we have seen is the *"tabac canadien,"* grown in the Province of Quebec and home cured. It is not difficult to acquire a taste for it, as hunters and fishermen know, but the aroma is something unbelievable as savored by the smoker's neighbors. The usual adulterations of tobacco, if harmful, must be extremely lingering poisons, probably no more sudden than tobacco itself. We urge profound consideration of this question before legislative action is taken.

* * *

Only a hopeless paralytic could fail to be stirred by some one article in the January *Pearson's.* Intelligent physicians will read with surprise the essay on How to Save Children from Diphtheria, by Edwin Morris, who avers that many elderly practitioners, besides graduates from low grade schools, are bitterly opposed to the use of antitoxine. How Tradesmen Cheat the Household, by Lewis Edwin Theiss, involves even some druggists. The Effort to Save Girls is a remarkably plain spoken article by Clara E. Laughlin; decent wages seem to be the solution. There are eight lively bits of fiction.

* * *

The Subject of Miracles, in the January *Everybody's,* by Dr. Wiliam Hanna Thomson, deals more with the subject of immortality, and is precisely as conclusive and satisfactory as similar conjectures have been from the time of Aristotle to our own. The Women of To-morrow, by William Hard, is wonderful and inspiring reading, even for men. Physicians, being busy men, probably missed, many of them, the recent Budget Exhibit in New York; The New Confidence Game, by William Brown Meloney, is an excellent account of it. There is a story, Hans Schmelz, by Edwin Lefèvre, which will appeal strongly to our emotional fellow practitioners of German origin. Most of the other stories are of a humorous cast and seasonable in their nature.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of and deaths from cholera, yellow fever, plague, and smallpox were reported to the surgeon general of the United States Public Health and Marine Hospital Service during the week ending December .23, 1910:

Place.	Date.	Cases.	Deaths.
Cholera—Insular.			
Philippine Islands—Ambos Camarines	Oct. 30-Nov. 5	10	6
Philippine Islands—Batangas	Oct. 30-Nov. 5	2	1
Philippine Islands—Bulacan	Oct. 30-Nov. 5	19	16
Philippine Islands—Cavite	Oct. 30-Nov. 5	2	3
Philippine Islands—Manila	Oct. 30-Nov. 5	7	3
Philippine Islands—Rizal	Oct. 30-Nov. 5	6	4
Cholera—Foreign.			
Arabia—Mascat	Nov. 6-12	23	22
India—Bombay	Nov. 9-15		1
Italy	Dec. 7-13	30	12
Italy—Caltanisetta, province	Nov. 20-26	3	1
Italy—Caserta, province	Nov. 20-26	7	
Italy—Rome, province	Nov. 20-26	18	1
Japan—Aichi	Oct. 16-Nov. 19	3	
Japan—Ehime	Sept. 23-Nov. 19	24	
Japan—Hiroshima	Sept. 25-Nov. 19	57	
Japan—Hyogo	Sept. 14-Nov. 19	534	
Japan—Kagawa	Oct. 2-Nov. 19	380	
Japan—Kagoshima	Oct. 28-Nov. 19	3	
Japan—Kochi	Oct. 18-Nov. 19	69	
Japan—Kukuoka	Sept. 30-Nov. 19	166	
Japan—Kumamoto	Oct. 18-Nov. 19	10	
Japan—Kyoto	Sept. 30-Nov. 19	141	
Japan—Miye	Oct. 11-Nov. 19	8	
Japan—Nagasaki	Oct. 16-Nov. 20	17	
Japan—Nara	Oct. 3-Nov. 19	29	
Japan—Okayama	Sept. 29-Nov. 19	68	
Japan—Oita	Oct. 10-Nov. 19	2	
Japan—Osaka	Sept. 10-Nov. 19	939	
Japan—Saga	Oct. 4-Nov. 19	45	
Japan—Shimane	Oct. 24-Nov. 19	5	
Japan—Tokushima	Oct. 3-Nov. 19	59	
Japan—Tokyo	Oct. 18	1	1
Japan—Wakayama	Oct. 6-Nov. 19	21	
Japan—Yamaguchi	Oct. 12-Nov. 19	37	
Java—Batavia	Oct. 30-Nov. 5	5	2
Manchuria—Dalny	Nov. 6-12	2	
Turkey—Adrianople	Nov. 2-21	94	34
Turkey—Constantinople	Nov. 1-21	368	201
Turkey in Asia—Basra	Oct. 25-Nov. 13	221	170
Turkey in Asia—Erzeroum, Vilayet	Oct. 27-Nov. 21	29	24
Turkey in Asia—Samsoun	Nov. 13-20	12	12
Turkey in Asia—Trebizond	Oct. 31-Nov. 19	112	60
Turkey in Asia—Zongouldac	Oct. 31-Nov. 19	16	7
Yellow Fever—Foreign.			
Brazil—Manaos	Nov. 13-26		6
Brazil—Para	Nov. 20-26	37	14
Venezuela—Caracas	Oct. 22-Nov. 21	12	
Plague—Foreign.			
India—Bombay	Nov. 9-15		11
India—Kurrachee	Nov. 6-12	3	3
India—Madras	Nov. 6-12		1
India—Rangoon	Oct. 26-Nov. 5		2
Indo-China—Saigon	Oct. 24-30	1	1
Manchuria—Manchuria Station	Oct. 25-Dec. 2	335	321
Smallpox—United States.			
Alabama—Montgomery	Dec. 4-10	2	
Florida—Dade County	Nov. 26-Dec. 3	2	
Florida—Duval County	Nov. 26-Dec. 10	1	
Florida—Escambia County	Nov. 26-Dec. 10	2	
Florida—Gadsden County	Nov. 26-Dec. 3	10	
Florida—Hillsboro County	Nov. 26-Dec. 10	18	
Florida—Jackson County	Nov. 26-Dec. 3	2	
Florida—Leon County	Nov. 26-Dec. 3	32	
Florida—Madison County	Nov. 26-Dec. 3	6	
Florida—Manatee County	Nov. 26-Dec. 3	1	
Kansas—Allen County	Oct. 1-31	41	1
Kansas—Barton County	Oct. 1-31	1	
Kansas—Doniphan County	Oct. 1-31	16	
Kansas—Marshall County	Oct. 1-31	3	
Kansas—Nemaha County	Oct. 1-31	1	
Kansas—Sedgwick Co., Wichita	Oct. 1-31	1	
Kansas—Shawnee Co., Topeka	Oct. 1-31	1	
Kansas—Wyandotte County, exclusive of Kansas City	Oct. 1-31	1	
Kansas—Kansas City	Oct. 1-31	1	
Louisiana—New Orleans	Dec. 4-10	14	
Michigan—Alger County	Nov. 1-30	1	
Michigan—Allegan County	Nov. 1-30	1	
Michigan—Alpena County	Nov. 1-30	6	
Michigan—Arenac County	Nov. 1-30	4	
Michigan—Branch County	Nov. 1-30	1	
Michigan—Charlevoix County	Nov. 1-30	1	
Michigan—Cheboygan County	Nov. 1-30	12	
Michigan—Clinton County	Nov. 1-30	16	
Michigan—Crawford County	Nov. 1-30	24	
Michigan—Eaton County	Nov. 1-30	1	
Michigan—Emmet County	Nov. 1-30	1	
Michigan—Genesee County	Nov. 1-30	19	
Michigan—Gladwin County	Nov. 1-30	1	
Michigan—Grand Traverse County	Nov. 1-30	24	
Michigan—Gratiot County	Nov. 1-30	2	
Michigan—Huron County	Nov. 1-30	7	
Michigan—Ingham County	Nov. 1-30	9	
Michigan—Ionia County	Nov. 1-30	4	
Michigan—Iosco County	Nov. 1-30	1	
Michigan—Isabella County	Nov. 1-30	2	
Michigan—Keweenaw County	Nov. 1-30	3	
Michigan—Lake County	Nov. 1-30	1	
Michigan—Lapeer County	Nov. 1-30	33	16
Michigan—Macomb County	Nov. 1-30	2	
Michigan—Mecosta County	Nov. 1-30	3	
Michigan—Midland County	Nov. 1-30	1	
Michigan—Oakland County	Nov. 1-30	1	
Michigan—Otsego County	Nov. 1-30	2	
Michigan—Saginaw County, exclusive of Saginaw	Nov. 1-30	33	5
Michigan—Saginaw	Nov. 1-30	115	28
Michigan—Salinac County	Nov. 1-30	7	
Michigan—Washtenaw County	Nov. 1-30	1	
Nebraska—Lincoln	Oct. 1-31	2	
New York	Oct. 1-31	1	
Ohio—Ashland County, Ashland	Nov. 1-30	6	
Ohio—Franklin County, Columbus	Nov. 1-30	2	
Oregon—Entire State	Nov. 24-Dec. 13	6	4
Tennessee—Hamilton County, Chattanooga	Dec. 4-10	2	
Tennessee—Shelby County	Oct. 25-31	4	
Virginia—Portsmouth	Dec. 4-10	2	
Wisconsin—Dunn County	Nov. 1-30	1	
Wisconsin—Douglas County	Nov. 1-30	1	
Wisconsin—Eau Claire County	Nov. 1-30	3	
Wisconsin—Iowa County	Nov. 1-30	9	
Wisconsin—La Crosse County	Nov. 1-30	1	
Wisconsin—Lafayette County	Nov. 1-30	16	
Wisconsin—Pierce County	Nov. 1-30	1	
Wisconsin—Milwaukee County	Nov. 1-30	5	
Smallpox—Foreign.			
Brazil—Para	Nov. 20-26	8	
Canada—Louisburg	Dec. 4-10	1	
Canada—Quebec	Dec. 4-10	1	
Canada—Newcastle	Dec. 4-10	3	
Canada—Sydney	Dec. 4-10	4	

Place.	Date.	Cases.	Deaths.
Canada—Victoria	Nov. 26-Dec. 3	2	
China—Shanghai	Nov. 6-20		6
Colombia—Cartagena	Nov. 13-21	25	
France—Paris	Nov. 13-19	5	
Germany—General	Nov. 14-Dec. 3	3	1
India—Madras	Nov. 6-12		6
Indo-China—Saigon	Oct. 24-30	4	3
Italy—Naples	Nov. 20-26	8	
Java—Batavia	Oct. 30-Nov. 5	2	
Mexico—Monterey	Nov. 26-Dec. 4		1
Mexico—San Luis Potosi	Oct. 30-Nov. 12	3	3
Morocco—Tangier	Nov. 13-19	2	
Peru—Salaverry	Nov. 8-21	7	1
Portugal—Lisbon	Nov. 13-26	25	
Straits Settlements—Penang	Oct. 23-Nov. 5	125	38
Straits Settlements—Singapore	Oct. 23-Nov. 5	8	3
Turkey in Asia—Beirut	Nov. 20-26	3	
Turkey in Asia—Trebizond	Nov. 13-19	6	2

Public Health and Marine Hospital Service:

Official list of changes in the stations and duties of commissioned and other officers serving in the United States Public Health and Marine Hospital Service for the seven days ending December 21, 1910:

Brooks, S. P., Acting Assistant Surgeon. Leave of absence granted for seven days from December 12, 1910, amended to read nineteen days from December 13, 1910.

Carter, H. R., Surgeon. Directed to proceed to Evansville, Ind., and make inspection of the operations of the Service at that port.

Cleaves, F. H., Acting Assistant Surgeon. Granted six days' leave of absence from December 24, 1910, under paragraph 210, Service Regulations.

Corput, C. M., Passed Assistant Surgeon. Granted two days' leave of absence from December 2, 1910, under paragraph 189, Service Regulations.

Foster, M. H., Passed Assistant Surgeon. Granted two days' leave of absence, December 14 and 15, 1910, on account of sickness.

Hart, G. G., Acting Assistant Surgeon. Granted eleven days' leave of absence from December 20, 1910.

Hume, Lea, Acting Assistant Surgeon. Granted ten days' leave of absence from December 13, 1910.

Iltis, C. W., Pharmacist. Granted seven days' leave of absence from December 14, 1910, under paragraph 210, Service Regulations.

Lloyd, B. H., Passed Assistant Surgeon. Granted two days' leave of absence, December 8 and 9, 1910, on account of sickness.

Lumsden, L. L., Passed Assistant Surgeon. Directed to proceed to Des Moines, Iowa, and confer with the Secretary of the State Board of Health, relative to an outbreak of typhoid fever.

McLaughlin, A. J., Passed Assistant Surgeon. Directed to proceed to Buffalo, N. Y., via Albany, N. Y., on special temporary duty; granted six days' leave of absence en route.

Megaw, H., Pharmacist. Granted two days' leave of absence, December 20 and 21, 1910.

Mullan, F. H., Passed Assistant Surgeon. Granted one day's leave of absence, December 15, 1910, on account of sickness.

Pettus, W. J., Assistant Surgeon General. Directed to proceed to Baltimore, Md., and make inspection of the operations of the Service at that port; granted five days' leave of absence from December 27, 1910.

Safford, M. Victor, Acting Assistant Surgeon. Granted five days' leave of absence from December 14, 1910, under paragraph 210, Service Regulations.

Scott, E. B., Pharmacist. Granted six days' leave of absence from December 19, 1910, without pay.

Tappan, J. W., Acting Assistant Surgeon. Granted ten days' leave of absence from December 17, 1910.

Van Ness, G. I., Jr., Pharmacist. Granted nine days' leave of absence from December 21, 1910.

Vogel, C. W., Passed Assistant Surgeon. Granted five days' leave of absence from December 25, 1910.

Wakefield, H. C., Acting Assistant Surgeon. Granted four days' leave of absence from December 16, 1910, under paragraph 210, Service Regulations.

Warner, H. J., Assistant Surgeon. Granted two days' leave of absence from December 21, 1910.

Appointment.

Louis Stemple appointed a pharmacist of the third class, December 14, 1910.

Army Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Army for the week ending December 24, 1910:

Conner, Dillis S., Lieutenant, Medical Reserve Corps. Resignation accepted to take effect on December 20th.

Cullen, Charles W., Lieutenant, Medical Reserve Corps. Ordered to proceed from Fort D. A. Russell, Wyo., to Fort Duchesne, Utah, for temporary duty.

Foster, George B., Jr., Lieutenant, Medical Corps. Ordered to Washington Barracks, D. C., for temporary duty.

Leeper, John F., Lieutenant, Medical Reserve Corps. Granted thirty days' leave of absence about January 1, 1911.

McAndrew, P. H., Major, Medical Corps. Left Fort Terry, N. Y., on ten days' leave of absence.

Tetrault, Charles A., Lieutenant, Medical Reserve Corps. Reported for temporary duty at Fort Terry, N. Y.

Thomason, Henry D., Captain, Medical Corps. Granted thirty days' leave of absence.

Woodson, Thomas D., Lieutenant, Medical Corps. Granted thirty days' leave of absence.

Navy Intelligence:

Official list of changes in the stations and duties of officers serving in the Medical Corps of the United States Navy for the week ending December 24, 1910:

Field, J. G., Surgeon. Ordered home to await orders.

Klock, G. H., Pharmacist. Detached from the naval medical supply depot, New York, N. Y., and ordered to duty at the naval magazine, Fort Mifflin, Pa.

Phillips, T. N., Pharmacist. Transferred to the retired list from December 16, 1910, detached from the naval dispensary, Navy Yard, Norfolk, Va., and ordered home.

Births, Marriages, and Deaths.

Died.

Bertholf.—In Peabody, Kansas, on Friday, December 16th, Dr. Charles M. Bertholf, aged thirty-five years.

Cherry.—In Morgantown, Kentucky, on Tuesday, December 13th, Dr. William R. Cherry, aged forty years.

Collier.—In Atlanta, Georgia, on Monday, December 12th, Dr. Thomas J. Collier, aged seventy years.

Culbertson.—In Grays Court, South Carolina, on Thursday, December 15th, Dr. J. R. Culbertson, aged sixty-five years.

Donnan.—In New Castle, Pennsylvania, on Wednesday, December 14th, Dr. E. A. Donnan, aged fifty-five years.

Dubs.—In Chicago, on Monday, December 19th, Dr. Rudolph S. Dubs, aged forty-four years.

Gaither.—In China Grove, North Carolina, on Saturday, December 17th, Dr. John R. Gaither, aged sixty-five years.

Gallimore.—In San José, California, on Friday, December 16th, Dr. Elizabeth Gallimore, aged fifty years.

Gapen.—In Madison, Wisconsin, on Saturday, December 17th, Dr. Clarke C. Gapen, aged sixty years.

Hopkins.—In New York City, on Monday, December 19th, Dr. John Swinburne Hopkins, aged fifty-one years.

Hunt.—In Baltimore, on Wednesday, December 14th, Dr. Presley Craig Hunt.

Kellogg.—In Plattsburg, New York, on Tuesday, December 20th, Dr. David Sherwood Kellogg, aged sixty-three years.

McCarty.—In Madison, Indiana, on Thursday, December 15th, Dr. W. W. McCarty, aged eighty-two years.

Parker.—In Somerset, Kentucky, on Sunday December 18th, Dr. J. W. R. Parker, aged eighty-seven years.

Rogers.—In Findlay, Ohio, on Sunday, December 18th, Dr. Frank W. Rogers, aged forty-seven years.

Smith.—In Chicago, on Friday, December 16th, Dr. Dexter A. Smith, aged sixty years.

Smith.—In Philadelphia, on Wednesday, December 14th, Dr. George W. Smith, aged sixty-eight years.

Todd.—In Washington, Louisiana, on Thursday, December 15th, Dr. D. L. Todd, aged eighty-three years.

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